United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

In cooperation with
the University of Georgia,
College of Agricultural and
Environmental Sciences,
Agricultural Experiment
Stations

Soil Survey of Webster County, Georgia

How To Use This Soil Survey

General Soil Map

The general soil map, which is a color map, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

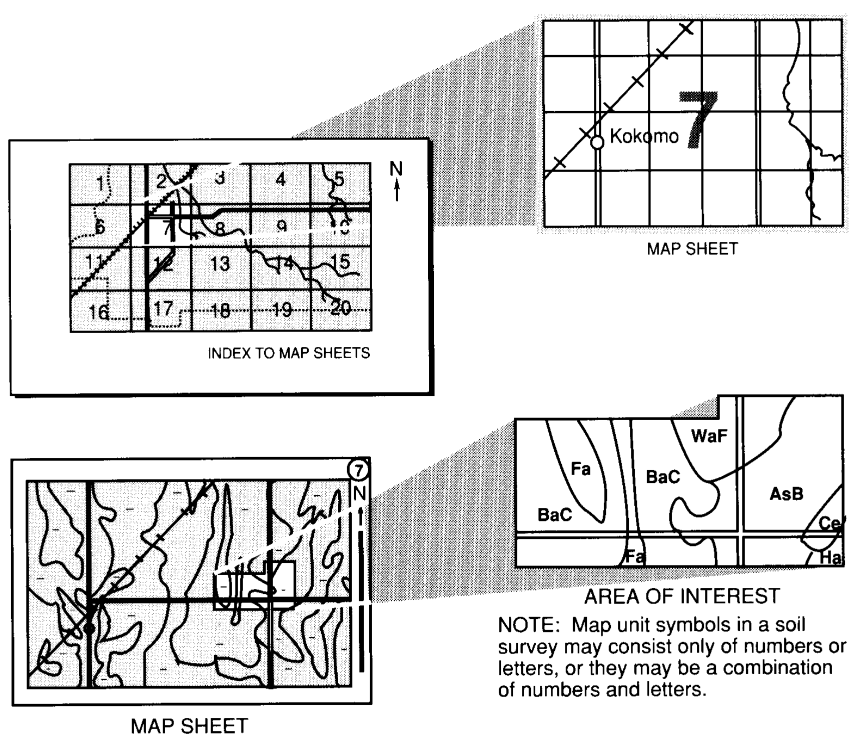
Detailed Soil Maps

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



National Cooperative Soil Survey

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service has leadership for the Federal part of the National Cooperative Soil Survey. This survey was made cooperatively by the Natural Resources Conservation Service and the University of Georgia, College of Agricultural and Environmental Sciences, Agricultural Experiment Stations. The survey is part of the technical assistance furnished to the Lower Chattahoochee River Soil and Water Conservation District.

Major fieldwork for this soil survey was completed in 2008. Soil names and descriptions were approved in 2009. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2009. The most current official data are available on the Internet.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

Nondiscrimination Statement

Citation

The recommended citation for this survey is:

United States Department of Agriculture, Natural Resources Conservation Service. 2011. Soil Survey of Webster County, Georgia. http://soils.usda.gov/survey/printed_surveys/

Cover Caption

Irrigated peanuts in an area of Benevolence loamy sand, 0 to 5 percent slopes. Peanuts are an important agronomic crop in Webster County.

Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at http://www.nrcs.usda.gov.

Contents

Issued September 2011

Foreword

Soil surveys contain information that affects land use planning in survey areas. They include predictions of soil behavior for selected land uses. The surveys highlight soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

Soil surveys are designed for many different users. Farmers, ranchers, foresters, and agronomists can use the surveys to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the surveys to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the surveys to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. The location of each map unit is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

James E. Tillman, Sr.
State Conservationist
Natural Resources Conservation Service

Soil Survey of
Webster County, Georgia

By Scott Moore

Fieldwork by Scott Moore, Alfred Green, and Jerry Pilkinton

United States Department of Agriculture,
Natural Resources Conservation Service,
in cooperation with
the University of Georgia,
College of Agricultural and Environmental Sciences,
Agricultural Experiment Stations

WEBSTER COUNTY is in southwestern Georgia, about 35 miles southeast of Columbus and 140 miles south of Atlanta (fig. 1). The total surface area of Webster County is 134,400 acres. Webster County is bounded on the north by Marion County, on the east by Sumter County, on the south by Terrell and Randolph Counties, and on the west by Stewart County.

The county seat for Webster County is Preston. Farming, forestry, and related enterprises are the major industries.

Webster County is within parts of two Major Land Resource Areas: the Southern Coastal Plain (133A) and the Carolina and Georgia Sand Hills (137). Most of the soils of the Southern Coastal Plain are well drained and on uplands. The soils on the low, nearly level flood plains and terraces are loamy and range from well drained to poorly drained. Slopes are mainly 0 to 15 percent. The northern part of Webster County is in the Carolina and Georgia Sand Hills Major Land Resource Area. The soils of the Carolina and Georgia Sand Hills are mainly well drained or somewhat excessively drained. They have a sandy surface layer and a loamy subsoil or have a sandy surface layer, a sandy subsurface layer, and a loamy subsoil. The landscape is nearly level to moderately steep. Slopes range from 0 to 6 percent in the more nearly level areas and from 10 to 25 percent in the steeper areas. Surface relief ranges from almost level, undulating, and gently sloping to rolling and hilly. Good surface drainage prevails, except for some small depressions and large areas along the streams.

Elevation ranges from 640 feet near Parrot to 300 feet on the Kinchafoonee Creek at the Sumter County line.

General Nature of the Survey Area

This section provides general information about the survey area. It describes history, agriculture, and climate.

History

Webster County was established in 1853 by the Georgia Legislature from portions of Lee and Stewart Counties (Georgia Humanities Council, 2007). It became the 103rd county in Georgia. Webster County was originally named Kinchafoonee, which is a

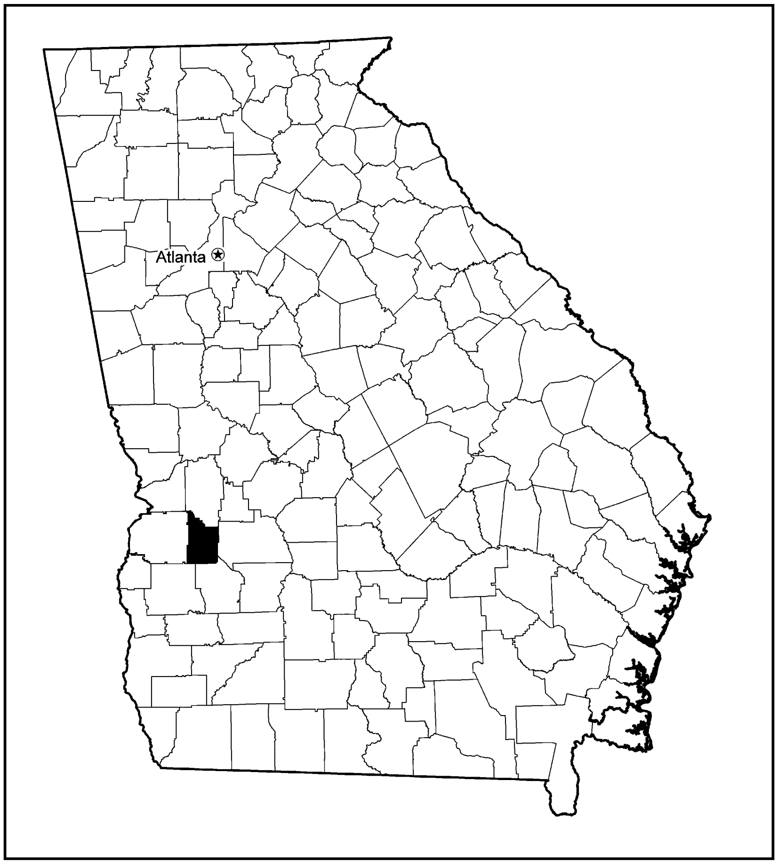


Figure 1.—Location of Webster County in Georgia.

Creek Indian word meaning “white bones” and the name of the main creek running north to southeast through the area. In 1856, the county was renamed Webster County in honor of Daniel Webster, former U.S. representative from New Hampshire, U.S. senator from Massachusetts, and U.S. secretary of state.

The first settlement in Webster County was originally named Lanahassee and was located east of Lanahassee Creek. The settlement was later moved 3 miles west and renamed Preston in honor of William C. Preston, a politician and educator from South Carolina.

The first known inhabitants of the area were the Creek Indians. Creek names are still used for some places, including Kinchafoonee, Choctahatchee, and Lanahassee creeks. The Creek ceded the land to the United States in the treaty of 1826.

Agriculture

Mike Goare, soil conservation technician, Natural Resources Conservation Service, helped prepare this section.

From the earliest settlers to modern farmers, the people of Webster County have always found agriculture to be important. Subsistence crops grown by the early settlers were mainly corn, small grain, potatoes, sugarcane, and many kinds of fruits and vegetables. Livestock production consisted mainly of hogs and some cattle. Most farming families had a milk cow to provide milk and butter. Cotton was the main cash crop until the infestation by the boll weevil. Corn and peanuts then replaced cotton as the main money crop.

Soil erosion and low fertility have been the most important management concerns on farmland in the survey area over the years. In the early 1900s, farming became more intensive and tenant-type farming was widespread. This combination led to misuse of the land, and soil erosion increased dramatically. Changes in land ownership were common, and soil fertility was not maintained in most places. The economic depression in the 1930s marked the worst period for poor upkeep and care of the land. An extensive acreage was farmed without conservation practices. As a result, excessive erosion occurred on the moderately steep slopes.

In 1935, the United States Department of Agriculture, Soil Conservation Service, was created to help landowners care for the land. As a result of local involvement, the Lower Chattahoochee River Soil and Water Conservation District was formed in 1939. The partnership between the Soil Conservation Service (now the Natural Resources Conservation Service) and the Conservation District continues to this day and has helped to save uncounted tons of soil. The partnership helps landowners plan and install conservation practices to minimize erosion. Terraces, grassed waterways, tree plantings, and pasture plantings are the main conservation practices that have been installed in the survey area. Due to rising prices of diesel fuel, it has become a high priority to convert diesel irrigation pumps to electric pumps and convert high pressure pivot systems to low pressure systems.

In 2008, Webster County had around 30,000 acres of farmland. Of this acreage, about 15 percent was grassland and pastureland, 10 percent was in the Conservation Reserve Program, 3 percent was used for pecan trees (fig. 2), and the remaining 72 percent was cultivated cropland. The major crops in the area were cotton, peanuts, corn, and small grain. Some crops were planted using conservation tillage or strip-till methods. Irrigation was used where water is available. The main forms of irrigation were center pivot systems and cable tow systems. Beef cattle accounted for most livestock production. Forest resources and related products also provided a major economic input for the area.

Figure 2.—Young pecan trees in an area of Faceville sandy loam, 2 to 5 percent slopes. Pecans are the most abundant orchard crop in Webster County.

Climate

Prepared by the Natural Resources Conservation Service National Water and Climate Center, Portland, Oregon.

The climate tables were created using data from a climate station at Lumpkin, Georgia. Thunderstorm days, relative humidity, percent sunshine, and wind information were estimated from the first order station at Columbus, Georgia.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Lumpkin, Georgia, in the period 1971 to 2000. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

In winter, the average temperature is 49.2 degrees F and the average daily minimum temperature is 36.5 degrees. The lowest temperature on record, which occurred on January 21, 1985, is -4 degrees. In summer, the average temperature is 78.4 degrees and the average daily maximum temperature is 90.6 degrees. The highest temperature, which occurred on August 20, 1980, is 105 degrees.

Growing degree days are shown in Table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The average annual total precipitation is about 48.00 inches. Of this, about 25.27 inches, or 53 percent, usually falls in April through October. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 7.23 inches on December 6, 1972. Thunderstorms occur on about 54 days each year, and most occur in July.

The average seasonal snowfall is 0.0 inches. The greatest snow depth at any one time during the period of record was 3.0 inches recorded on February 23, 1901. In most years, 0 days have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 4.0 inches recorded on February 25, 1914.

The average relative humidity in mid-afternoon is about 54 percent. Humidity is higher at night, and the average at dawn is about 87 percent. The sun shines 68 percent of the time in summer and 53 percent in winter. The prevailing wind is from the east-northeast. Average wind speed is highest, 7.7 miles per hour, in March.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a

considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

General Soil Map Units

The general soil map in this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. It is named for the major soils or miscellaneous areas. The components of one map unit can occur in another but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

1. Kinston-Bibb

Nearly level, poorly drained soils on flood plains

Setting

Location: Along Kinchafoonee Creek
Landscape: Coastal Plain
Landform: Flood plains
Slope: 0 to 2 percent

Composition

Percent of the survey area: 4
Kinston soils: 45 percent
Bibb soils: 35 percent
Minor components: 20 percent

Soil Characteristics

Kinston
Surface layer: Dark gray loam and very dark gray silt loam having yellowish red mottles
Subsoil: Dark gray clay loam
Substratum: Upper part—very dark gray sandy loam that has light brownish gray and pale brown mottles; next part—dark gray sandy clay loam that has dark yellowish brown mottles; lower part—dark gray loamy sand
Depth class: Very deep
Drainage class: Poorly drained
Depth to seasonal high water table: At the surface to 1 foot
Slope: 0 to 1 percent
Parent material: Loamy and sandy alluvium

Bibb

Surface layer: Very dark gray fine sandy loam

Underlying material: Upper part—predominantly dark gray sandy loam that has strong brown mottles; next part—light brownish gray and gray sandy loam that has light yellowish brown, brownish yellow, and pale brown mottles; next part—very dark gray sandy loam; next part—light brownish gray and very dark gray stratified sand to sandy loam; lower part—dark gray loamy sand

Depth class: Very deep

Drainage class: Poorly drained

Depth to seasonal high water table: $^{1}/_{2}$ to 1 foot

Slope: 0 to 2 percent

Parent material: Stratified loamy and sandy alluvium

Minor soils

- Somewhat poorly drained Ocilla soils, which are on stream terraces
- Well drained Ochlockonee soils, which are in the higher positions on the flood plains
- Excessively drained Troup soils, which are on uplands adjacent to the major soils

Use and Management

Major uses: Mostly woodland

Major management concerns: Flooding and wetness

Cropland, pasture, and hayland

Management concerns: Flooding and wetness

Woodland

Management concerns: Flooding and wetness

Urban development

Management concerns: Flooding that makes this map unit unsuitable for urban development

2. Ocilla-Bonneau-Goldsboro

Nearly level to very gently sloping, well drained to somewhat poorly drained soils that have sandy surface and subsurface layers and a loamy subsoil or have a sandy surface layer and a loamy subsoil; on stream terraces and broad interstream divides

Setting

Location: East-central part of the county along Kinchafoonee Creek

Landscape: Coastal Plain

Landform: Stream terraces and broad interstream divides

Slope: 0 to 5 percent

Composition

Percent of the survey area: 1

Ocilla soils: 24 percent

Bonneau soils: 16 percent

Goldsboro soils: 12 percent

Minor components: 48 percent

Soil Characteristics

Ocilla

Surface layer: Grayish brown loamy sand

Subsurface layer: Light brownish gray loamy sand

Subsoil: Upper part—yellowish brown sandy clay loam that has light brownish gray and strong brown mottles; lower part—light brownish gray sandy clay loam that has yellowish red, strong brown, red, and brownish yellow mottles
Depth class: Very deep
Drainage class: Somewhat poorly drained
Depth to seasonal high water table: 1 to 2 1/2 feet
Slope: 0 to 2 percent
Parent material: Sandy and loamy marine sediments

Bonneau
Surface layer: Dark grayish brown loamy sand
Subsurface layer: Predominantly yellowish brown loamy sand
Subsoil: Upper part—yellowish brown sandy loam; next part—light yellowish brown sandy loam that has very pale brown and yellowish brown mottles; lower part—light yellowish brown sandy clay
Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: 4 to 6 feet
Slope: 0 to 5 percent
Parent material: Sandy and loamy marine deposits

Goldsboro
Surface layer: Brown loamy sand
Subsoil: Upper part—light yellowish brown sandy loam; next part—light yellowish brown sandy clay loam that has light gray and yellowish brown mottles; lower part—light gray sandy clay loam that has red, yellowish brown, and light gray mottles
Drainage class: Moderately well drained
Depth to seasonal high water table: 2 to 3 feet
Slope: 0 to 2 percent
Parent material: Loamy marine sediments

Minor soils
- Poorly drained Grady soils, which are in depressions
- Poorly drained Kinston and Bibb soils, which are on flood plains
- Well drained Lucy soils, which are on ridges and side slopes
- Well drained Norfolk soils, which are in the slightly higher positions
- Somewhat excessively drained Troup soils, which are on ridges and side slopes

Use and Management

Major uses: Woodland
Major management concerns: Seasonal wetness at a depth of 1 to 6 feet

Pasture and hayland
Management concerns: Low available water capacity and low nutrient holding capacity

Woodland
Management concerns: Equipment limitations and seedling mortality

Urban development
Management concerns: Seasonal wetness at a depth of 1 to 6 feet; unstable excavation walls

Recreational development
Management concerns: Seasonal wetness and poor trafficability

3. Troup-Lucy

Nearly level to strongly sloping, somewhat excessively drained and well drained soils that have a sandy surface layer, a sandy subsurface layer, and a loamy subsoil; on broad interstream divides

Setting

Location: Throughout the survey area
Landscape: Coastal Plain
Landform: Broad interstream divides
Slope: 0 to 15 percent

Composition

Percent of the survey area: 44
Troup soils: 49 percent
Lucy soils: 13 percent
Minor components: 38 percent

Soil Characteristics

Troup
Surface layer: Brown loamy sand
Subsurface layer: Strong brown and yellowish red loamy sand
Subsoil: Red sandy loam
Depth class: Very deep
Drainage class: Somewhat excessively drained
Slope: 0 to 15 percent
Parent material: Loamy and sandy marine deposits

Lucy
Surface layer: Grayish brown loamy sand
Subsurface layer: Brown loamy sand
Subsoil: Upper part—yellowish red sandy loam; lower part—red sandy clay loam
Depth class: Very deep
Drainage class: Well drained
Slope: 0 to 15 percent
Parent material: Loamy and sandy marine deposits

Minor soils
- Poorly drained Bibb and Kinston soils, which are on flood plains
- Well drained Cowarts and Nankin soils, which are on summits and side slopes
- Well drained Bonneau soils, which are in the lower positions
- Well drained Benevolence and Orangeburg soils, which are in positions similar to those of the major soils

Use and Management

Major uses: Cropland, pasture, and woodland
Major management concerns: Low available water capacity, unstable excavation walls, and, in some areas, slope

Cropland
Management concerns: Low available water capacity and low nutrient holding capacity

Pasture and hayland
Management concerns: Low available water capacity and low nutrient holding capacity

Woodland
Management concerns: Equipment limitations and seedling mortality

Urban development
Management concerns: Unstable excavation walls

Recreational development
Management concerns: Droughtiness and poor trafficability

4. Orangeburg-Greenville-Faceville

Nearly level to strongly sloping, well drained soils that have a sandy surface layer and a loamy subsoil or have a loamy surface layer and a clayey subsoil; on broad interstream divides

Setting

Location: Mainly in the southwestern part of the county
Landscape: Coastal Plain
Landform: Broad interstream divides
Slope: 0 to 15 percent

Composition

Percent of the survey area: 24
Orangeburg soils: 31 percent
Greenville soils: 14 percent
Faceville soils: 13 percent
Minor components: 42 percent

Soil Characteristics

Orangeburg
Surface layer: Dark brown loamy sand
Subsurface layer: Yellowish red sandy loam
Subsoil: Red sandy clay loam
Depth class: Very deep
Drainage class: Well drained
Slope: 0 to 15 percent
Parent material: Loamy marine deposits

Greenville
Surface layer: Dark reddish brown sandy clay loam
Subsoil: Dark red sandy clay
Depth class: Very deep
Drainage class: Well drained
Slope: 0 to 15 percent
Parent material: Clayey marine deposits

Faceville
Surface layer: Reddish brown sandy loam
Subsoil: Red sandy clay
Depth class: Very deep
Drainage class: Well drained
Slope: 0 to 8 percent
Parent material: Coastal Plain sediments

Minor soils
- Well drained Cowarts and Nankin soils, which are on side slopes and narrow ridges
- Poorly drained Kinston and Bibb soils, which are on flood plains
- Well drained Lucy soils, which are in the slightly higher positions and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches

- Somewhat excessively drained Troup soils, which are in slightly higher positions and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Use and Management

Major uses: Cropland, pasture, and woodland
Major management concerns: Erosion and, in some areas, slope

Cropland
Management concerns: Erosion

Pasture and hayland
Management concerns: None

Woodland
Management concerns: None

Urban development
Management concerns: Slope

Recreational development
Management concerns: Slope

5. Cowarts-Orangeburg-Nankin

Nearly level to steep, well drained soils that have a sandy surface layer and a loamy or clayey subsoil; on interfluves and hillslopes

Setting

Location: North and west-central parts of the county
Landscape: Coastal Plain
Landform: Uplands
Slope: 0 to 35 percent

Composition

Percent of the survey area: 27
Cowarts soils: 21 percent
Orangeburg soils: 19 percent
Nankin soils: 17 percent
Minor components: 43 percent

Soil Characteristics

Cowarts
Surface layer: Dark grayish brown and brown loamy sand
Subsoil: Upper part—yellowish brown sandy loam; next part—brownish yellow sandy clay loam; lower part—brownish yellow sandy clay loam that has yellowish red and strong brown mottles
Substratum: Upper part—brownish yellow sandy loam that has yellowish red and pale brown mottles; lower part—brownish yellow, light yellowish brown, and yellowish red loamy sand
Drainage class: Well drained
Slope: 2 to 35 percent
Parent material: Loamy marine deposits

Orangeburg
Surface layer: Dark brown loamy sand
Subsurface layer: Yellowish red sandy loam

Subsoil: Red sandy clay loam
Depth class: Very deep
Drainage class: Well drained
Slope: 0 to 15 percent
Parent material: Loamy marine deposits

Nankin
Surface layer: Very dark grayish brown loamy sand
Subsoil: Upper part—dark yellowish brown sandy loam; next part—yellowish brown sandy clay loam that has strong brown mottles; next part—yellowish red sandy clay; lower part—strong brown sandy clay loam that has yellowish red mottles
Substratum: Upper part—yellowish brown sandy loam that has red mottles; lower part—yellowish brown sandy loam that has light brownish gray and red mottles
Depth class: Very deep
Drainage class: Well drained
Slope: 0 to 35 percent
Parent material: Loamy and clayey marine deposits

Minor soils
- Well drained Bonneau soils, which are on interfluves
- Poorly drained Kinston and Bibb soils, which are on flood plains
- Well drained Lucy soils, which are in the slightly higher positions and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Somewhat excessively drained Troup soils, which are in the slightly higher positions and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Use and Management

Major uses: Mostly woodland; some cropland and pasture
Major management concerns: Erosion, slow movement of water in the subsoil and substratum, and, in some areas, slope

Cropland
Management concerns: Erosion and slope

Pasture and hayland
Management concerns: Erosion and slope

Woodland
Management concerns: No significant concerns

Urban development
Management concerns: Slope and moderately slow permeability

Recreational development
Management concerns: Slope

Detailed Soil Map Units

The map units delineated on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. The soils of a given series can differ in texture of the surface layer, slope, stoniness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase

commonly indicates a feature that affects use or management. For example, Grady clay loam, ponded, is a phase of the Grady series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Cowarts-Nankin complex, 2 to 5 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Kinston and Bibb soils, 0 to 1 percent slopes, frequently flooded, is an undifferentiated group in this survey area.

Table 4 gives the acreage and proportionate extent of each map unit in the survey area. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils.

ArC—Arents, reclaimed land, 0 to 8 percent slopes

Map Unit Composition

Major components

Arents and similar components: About 70 percent

Minor components

- Cowarts soils, which are in lower positions than those of the Arents and have a sandy surface layer and a loamy subsoil
- Faceville soils, which are in positions similar to those of the Arents and have a loamy surface layer and a clayey subsoil
- Nankin soils, which are in lower positions than those of the Arents and have a sandy surface layer and a clayey subsoil
- Orangeburg soils, which are in positions similar to those of the Arents and have a sandy surface layer and a deep, loamy subsoil
- Red Bay soils, which are in positions similar to those of the Arents and have a sandy surface layer and a deep, loamy subsoil

Characteristics of the Arents

Landform: Broad interstream divides
Parent material: Marine deposits

Typical profile

0 to 14 inches—red sandy clay loam
14 to 80 inches—yellowish brown, yellowish red, reddish brown, and light gray sandy clay loam

BeB—Benevolence loamy sand, 0 to 5 percent slopes

Map Unit Composition

Major components

Benevolence and similar soils: About 85 percent

Minor components
- Lucy soils, which are in positions similar to those of the Benevolence soil and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Troup soils, which are in positions similar to those of the Benevolence soil or slightly higher and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Characteristics of the Benevolence Soil

Landform: Broad interstream divides
Parent material: Loamy marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 2e

Typical profile
Surface layer:
0 to 12 inches—brown loamy sand
Subsoil:
12 to 37 inches—yellowish red sandy loam
37 to 47 inches—red sandy loam
47 to 80 inches—red sandy clay loam

BeC—Benevolence loamy sand, 5 to 8 percent slopes

Map Unit Composition

Major components
Benevolence and similar soils: About 85 percent

Minor components
- Lucy soils, which are in positions similar to those of the Benevolence soil and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Orangeburg soils, which are in positions similar to those of the Benevolence soil and have a fine-loamy control section
- Red Bay soils, which are in positions similar to those of the Benevolence soil or slightly higher, have a dark red subsoil, and have a fine-loamy control section
- Troup soils, which are in positions similar to those of the Benevolence soil or slightly higher and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Characteristics of the Benevolence Soil

Landform: Broad interstream divides
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 3e

Typical profile
Surface layer:
0 to 12 inches—brown loamy sand
Subsoil:
12 to 37 inches—yellowish red sandy loam
37 to 47 inches—red sandy loam
47 to 80 inches—red sandy clay loam

BoB—Bonneau loamy sand, 0 to 5 percent slopes

Map Unit Composition

Major components
Bonneau and similar soils: About 85 percent

Minor components
- Lucy soils, which are in slightly higher positions than those of the Bonneau soil and have a subsoil with a redder hue
- Norfolk soils, which are in positions similar to those of the Bonneau soil or slightly lower and do not have thick, sandy surface and subsurface layers
- Orangeburg soils, which are in positions similar to those of the Bonneau soil and do not have thick, sandy surface and subsurface layers
- Troup soils, which are in the slightly higher positions and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Characteristics of the Bonneau Soil

Landform: Broad interstream divides
Parent material: Sandy and loamy marine deposits
Drainage class: Well drained
Seasonal high water table: Apparent, at a depth of about 4 to 6 feet
Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 2s

Typical profile
Surface layer:
0 to 6 inches—dark grayish brown loamy sand
Subsurface layer:
6 to 12 inches—light yellowish brown loamy sand
12 to 22 inches—yellowish brown loamy sand
22 to 33 inches—yellowish brown loamy sand
Subsoil:
33 to 52 inches—yellowish brown sandy loam
52 to 65 inches—light yellowish brown sandy loam that has very pale brown and yellowish brown mottles
65 to 72 inches—light yellowish brown sandy clay

BoC—Bonneau loamy sand, 5 to 8 percent slopes

Map Unit Composition

Major components
Bonneau and similar soils: About 85 percent

Minor components
- Lucy soils, which are in slightly higher positions than those of the Bonneau soil and have a subsoil with a redder hue
- Norfolk soils, which are in positions similar to those of the Bonneau soil or slightly lower and do not have thick, sandy surface and subsurface layers
- Orangeburg soils, which are in positions similar to those of the Bonneau soil and do not have thick, sandy surface and subsurface layers
- Troup soils, which are in the slightly higher positions and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Characteristics of the Bonneau Soil

Landform: Broad interstream divides
Parent material: Sandy and loamy marine deposits
Drainage class: Well drained
Seasonal high water table: Apparent, at a depth of about 4 to 6 feet
Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 3s

Typical profile
Surface layer:
0 to 6 inches—dark grayish brown loamy sand
Subsurface layer:
6 to 12 inches—light yellowish brown loamy sand
12 to 22 inches—yellowish brown loamy sand
22 to 33 inches—yellowish brown loamy sand
Subsoil:
33 to 52 inches—yellowish brown sandy loam
52 to 65 inches—light yellowish brown sandy loam that has very pale brown and yellowish brown mottles
65 to 72 inches—light yellowish brown sandy clay

CoB—Cowarts-Nankin complex, 2 to 5 percent slopes

Map Unit Composition

Major components
Cowarts and similar soils: About 65 percent
Nankin and similar soils: About 25 percent

Minor components
- Lucy soils, which are in positions similar to those of the Cowarts and Nankin soils or slightly higher and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Tifton soils, which are in smoother, less dissected positions than those of the Cowarts and Nankin soils and have more than 5 percent plinthite within a depth of 60 inches
- Troup soils, which are in the higher positions and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Characteristics of the Cowarts Soil

Landform: Interfluves and hillslopes
Parent material: Marine deposits

Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Slow
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 2e

Typical profile
Surface layer:
0 to 3 inches—dark grayish brown loamy sand
3 to 7 inches—brown loamy sand
Subsoil:
7 to 15 inches—yellowish brown sandy loam
15 to 22 inches—brownish yellow sandy clay loam
22 to 31 inches—brownish yellow sandy clay loam that has yellowish red mottles
31 to 40 inches—brownish yellow sandy clay loam that has yellowish red and strong brown mottles
Substratum:
40 to 48 inches—brownish yellow sandy loam that has yellowish red mottles
48 to 59 inches—brownish yellow sandy loam that has pale brown mottles
59 to 80 inches—brownish yellow, light yellowish brown, and yellowish red stratified loamy sand

Characteristics of the Nankin Soil

Landform: Interfluves and hillslopes
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Moderately slow
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 2e

Typical profile
Surface layer:
0 to 4 inches—very dark grayish brown loamy sand
Subsoil:
4 to 10 inches—dark yellowish brown sandy loam
10 to 16 inches—yellowish brown sandy clay loam that has strong brown mottles
16 to 34 inches—yellowish red sandy clay
34 to 39 inches—yellowish red sandy clay that has red mottles
39 to 44 inches—strong brown sandy clay loam that has yellowish red mottles
Substratum:
44 to 48 inches—yellowish brown sandy loam that has red mottles
48 to 55 inches—yellowish brown sandy loam that has red mottles
55 to 80 inches—yellowish brown sandy loam that has light brownish gray and red mottles

FeA—Faceville sandy loam, 0 to 2 percent slopes

Map Unit Composition

Major components
Faceville and similar soils: About 90 percent

Minor components

- Nankin soils, which are in lower positions than those of the Faceville soil and have a thinner solum
- Orangeburg soils, which are in positions similar to those of the Faceville soil or slightly lower and have less clay in the subsoil

Characteristics of the Faceville Soil

Landform: Broad interstream divides
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Moderately slow
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 1

Typical profile
Surface layer:
0 to 10 inches—reddish brown sandy loam
Subsoil:
10 to 30 inches—red sandy clay
30 to 72 inches—red sandy clay
72 to 80 inches—red sandy clay

FeB—Faceville sandy loam, 2 to 5 percent slopes

Map Unit Composition

Major components
Faceville and similar soils: About 85 percent

Minor components

- Nankin soils, which are in lower positions than those of the Faceville soil and have a thinner solum
- Orangeburg soils, which are in positions similar to those of the Faceville soil or slightly lower and have less clay in the subsoil

Characteristics of the Faceville Soil

Landform: Broad interstream divides
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 2e

Typical profile
Surface layer:
0 to 10 inches—reddish brown sandy loam
Subsoil:
10 to 30 inches—red sandy clay
30 to 72 inches—red sandy clay
72 to 80 inches—red sandy clay

FeC—Faceville sandy loam, 5 to 8 percent slopes

Map Unit Composition

Major components
Faceville and similar soils: About 85 percent

Minor components
- Nankin soils, which are in lower positions than those of the Faceville soil and have a thinner solum
- Orangeburg soils, which are in positions similar to those of the Faceville soil or slightly lower and have less clay in the subsoil

Characteristics of the Faceville Soil

Landform: Broad interstream divides
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 3e

Typical profile
Surface layer:
0 to 10 inches—reddish brown sandy loam
Subsoil:
10 to 30 inches—red sandy clay
30 to 72 inches—red sandy clay
72 to 80 inches—red sandy clay

GoA—Goldsboro loamy sand, 0 to 2 percent slopes

Map Unit Composition

Major components
Goldsboro and similar soils: About 80 percent

Minor components
- Grady soils, which are in depressional positions and are poorly drained
- Iuka soils, which are in the lower positions on flood plains
- Norfolk soils, which are in the higher, more convex positions and are well drained
- Ochlockonee soils, which are in the higher positions on flood plains
- Ocilla soils, which are in the lower positions, are somewhat poorly drained, and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Orangeburg soils, which are in the higher, more convex positions and are well drained

Characteristics of the Goldsboro Soil

Landform: Broad interstream divides; stream terraces
Parent material: Marine deposits
Drainage class: Moderately well drained
Seasonal high water table: Apparent, at a depth of about 2 to 3 feet
Flooding: None
Ponding: None

Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 2w

Typical profile
Surface layer:
0 to 10 inches—brown loamy sand
Subsoil:
10 to 18 inches—light yellowish brown sandy loam
18 to 33 inches—light yellowish brown sandy clay loam that has light gray and yellowish brown mottles
33 to 60 inches—light gray sandy clay loam that has light gray, red, and yellowish brown mottles
60 to 80 inches—light gray sandy clay loam that has red and yellowish mottles

GrA—Grady clay loam, ponded

Map Unit Composition

Major components
Grady and similar soils: About 80 percent

Minor components
- Goldsboro soils, which are in the higher positions and are moderately well drained
- Norfolk soils, which are in the higher positions and are well drained

Characteristics of the Grady Soil

Landform: Depressions
Parent material: Marine deposits
Drainage class: Poorly drained
Seasonal high water table: Apparent, at the surface to a depth of about 1 foot
Flooding: None
Ponding: Frequent
Permeability: Slow
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 5w

Typical profile
Surface layer:
0 to 5 inches—very dark grayish brown clay loam
Subsoil:
5 to 10 inches—gray clay
10 to 30 inches—light brownish gray clay
30 to 65 inches—light brownish gray clay that has yellowish red and yellowish brown mottles

GsA—Greenville sandy clay loam, 0 to 2 percent slopes

Map Unit Composition

Major components
Greenville and similar soils: About 90 percent

Minor components

- Nankin soils, which are in lower positions than those of the Greenville soil and have a thinner solum
- Orangeburg soils, which are in positions similar to those of the Greenville soil or slightly lower and have less clay in the subsoil
- Red Bay soils, which are in positions similar to those of the Greenville soil or slightly lower and have less clay in the subsoil

Characteristics of the Greenville Soil

Landform: Broad interstream divides
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: High
Depth class: Very deep
Land capability classification: 1

Typical profile
Surface layer:
0 to 8 inches—dark reddish brown sandy clay loam
Subsoil:
8 to 45 inches—dark red sandy clay
45 to 80 inches—dark red sandy clay

GsB—Greenville sandy clay loam, 2 to 5 percent slopes

Map Unit Composition

Major components
Greenville and similar soils: About 85 percent

Minor components

- Nankin soils, which are in lower positions than those of the Greenville soil and have a thinner solum
- Orangeburg soils, which are in positions similar to those of the Greenville soil or slightly lower and have less clay in the subsoil
- Red Bay soils, which are in positions similar to those of the Greenville soil or slightly lower and have less clay in the subsoil

Characteristics of the Greenville Soil

Landform: Broad interstream divides
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: High
Depth class: Very deep
Land capability classification: 3e

Typical profile
Surface layer:
0 to 8 inches—dark reddish brown sandy clay loam

Subsoil:
8 to 45 inches—dark red sandy clay
45 to 80 inches—dark red sandy clay

GsC—Greenville sandy clay loam, 5 to 8 percent slopes

Map Unit Composition

Major components
Greenville and similar soils: About 85 percent

Minor components
- Nankin soils, which are in lower positions than those of the Greenville soil and have a thinner solum
- Orangeburg soils, which are in positions similar to those of the Greenville soil or slightly lower and have less clay in the subsoil
- Red Bay soils, which are in positions similar to those of the Greenville soil or slightly lower and have less clay in the subsoil

Characteristics of the Greenville Soil

Landform: Broad interstream divides
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: High
Depth class: Very deep
Land capability classification: 4e

Typical profile
Surface layer:
0 to 8 inches—dark reddish brown sandy clay loam
Subsoil:
8 to 45 inches—dark red sandy clay
45 to 80 inches—dark red sandy clay

GvD2—Greenville sandy clay, 8 to 15 percent slopes, eroded

Map Unit Composition

Major components
Greenville and similar soils: About 85 percent

Minor components
- Nankin soils, which are in lower positions than those of the Greenville soil and have a thinner solum
- Orangeburg soils, which are in positions similar to those of the Greenville soil or slightly lower and have less clay in the subsoil
- Red Bay soils, which are in positions similar to those of the Greenville soil or slightly lower and have less clay in the subsoil

Characteristics of the Greenville Soil

Landform: Broad interstream divides
Parent material: Marine deposits

Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: High
Depth class: Very deep
Land capability classification: 6e

Typical profile
Surface layer:
0 to 3 inches—dark reddish brown sandy clay
Subsoil:
3 to 45 inches—dark red sandy clay
45 to 80 inches—dark red sandy clay

KBA—Kinston and Bibb soils, 0 to 1 percent slopes, frequently flooded

Map Unit Composition

Major components
Kinston and similar soils: About 45 percent
Bibb and similar soils: About 35 percent

Minor components
- Iuka soils, which are in the higher positions on flood plains and are moderately well drained
- Ocilla soils, which are in the higher positions and are moderately well drained
- Ochlockonee soils, which are in the higher positions on flood plains and are well drained
- Rains soils, which are in positions similar to those of the Kinston and Bibb soils and have a fine-loamy control section

Characteristics of the Kinston Soil

Landform: Flood plains
Parent material: Alluvium
Drainage class: Poorly drained
Seasonal high water table: Apparent, at the surface to a depth of about 1 foot
Flooding: Frequent
Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 6w

Typical profile
Surface layer:
0 to 3 inches—dark gray loam that has yellowish red mottles
3 to 8 inches—very dark gray silt loam that has yellowish red mottles
Subsoil:
8 to 15 inches—dark gray clay loam
Underlying material:
15 to 33 inches—very dark gray sandy loam that has light brownish gray and pale brown mottles

Substratum:
33 to 52 inches—dark gray sandy clay loam that has dark yellowish brown mottles
52 to 80 inches—dark gray loamy sand

Characteristics of the Bibb Soil

Landform: Flood plains
Parent material: Alluvium
Drainage class: Poorly drained
Seasonal high water table: Apparent, at a depth of about $^1/_2$ to 1 foot
Flooding: Frequent
Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 6w

Typical profile
Surface layer:
0 to 5 inches—very dark gray fine sandy loam
Underlying material:
5 to 8 inches—dark gray loam that has strong brown mottles
8 to 13 inches—dark gray sandy loam that has strong brown mottles
13 to 21 inches—light brownish gray sandy loam that has light yellowish brown, brownish yellow, and pale brown mottles
21 to 26 inches—gray sandy loam that has light yellowish brown mottles
26 to 45 inches—very dark gray sandy loam
45 to 63 inches—very dark gray and light brownish gray stratified sand to sandy loam
63 to 80 inches—dark gray loamy sand

LmB—Lucy loamy sand, 0 to 5 percent slopes

Map Unit Composition

Major components
Lucy and similar soils: About 85 percent

Minor components
- Cowarts soils, which are in positions similar to those of the Lucy soil or slightly lower and have sandy surface and subsurface layers with a combined thickness of less than 20 inches thick
- Bonneau soils, which are in slightly lower positions than those of the Lucy soil and have a subsoil with a yellower hue
- Norfolk soils, which are in positions similar to those of the Lucy soil, have a subsoil with a yellower hue, and do not have thick, sandy surface and subsurface layers
- Orangeburg soils, which are in positions similar to those of the Lucy soil or slightly higher and do not have thick, sandy surface and subsurface layers
- Troup soils, which are in positions similar to those of the Lucy soil or slightly higher and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Characteristics of the Lucy Soil

Landform: Broad interstream divides (fig. 3)
Parent material: Marine deposits
Drainage class: Well drained

Figure 3.—Cross-fenced pasture in an area of Lucy loamy sand, 0 to 5 percent slopes. Cross fencing is a valuable tool for forage management.

Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 2s

Typical profile
Surface layer:
0 to 8 inches—grayish brown loamy sand
Subsurface layer:
8 to 24 inches—brown loamy sand
Subsoil:
24 to 48 inches—yellowish red sandy loam
48 to 72 inches—red sandy clay loam

LmC—Lucy loamy sand, 5 to 8 percent slopes

Map Unit Composition

Major components
Lucy and similar soils: About 85 percent

Minor components
- Cowarts soils, which are in positions similar to those of the Lucy soil or slightly lower and have sandy surface and subsurface layers with a combined thickness of less than 20 inches
- Bonneau soils, which are in slightly lower positions than those of the Lucy soil and have a subsoil with a yellower hue
- Norfolk soils, which are in positions similar to those of the Lucy soil, have a subsoil with a yellower hue, and do not have thick, sandy surface and subsurface layers
- Orangeburg soils, which are in positions similar to those of the Lucy soil or slightly higher and do not have thick, sandy surface and subsurface layers
- Troup soils, which are in positions similar to those of the Lucy soil or slightly higher and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Characteristics of the Lucy Soil

Landform: Broad interstream divides
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 3s

Typical profile
Surface layer:
0 to 8 inches—grayish brown loamy sand
Subsurface layer:
8 to 24 inches—brown loamy sand
Subsoil:
24 to 48 inches—yellowish red sandy loam
48 to 72 inches—red sandy clay loam

LmD—Lucy loamy sand, 8 to 15 percent slopes

Map Unit Composition

Major components
Lucy and similar soils: About 85 percent

Minor components
- Cowarts soils, which are in positions similar to those of the Lucy soil or slightly lower and have sandy surface and subsurface layers with a combined thickness of less than 20 inches
- Bonneau soils, which are in slightly lower positions than those of the Lucy soil and have a subsoil with a yellower hue
- Norfolk soils, which are in positions similar to those of the Lucy soil, have a subsoil with a yellower hue, and do not have thick, sandy surface and subsurface layers
- Orangeburg soils, which are in positions similar to those of the Lucy soil or slightly higher and do not have thick, sandy surface and subsurface layers
- Troup soils, which are in positions similar to those of the Lucy soil or slightly higher and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Characteristics of the Lucy Soil

Landform: Broad interstream divides
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 4s

Typical profile
Surface layer:
0 to 8 inches—grayish brown loamy sand
Subsurface layer:
8 to 24 inches—brown loamy sand
Subsoil:
24 to 48 inches—yellowish red sandy loam
48 to 72 inches—red sandy clay loam

NcD—Nankin-Cowarts complex, 5 to 15 percent slopes

Map Unit Composition

Major components
Nankin and similar soils: About 60 percent
Cowarts and similar soils: About 25 percent

Minor components
- Faceville soils, which are in positions similar to those of the Nankin and Cowarts soils or slightly higher and have a subsoil that extends to a depth of more than 60 inches
- Greenville soils, which are in positions similar to those of the Nankin and Cowarts soils or slightly higher and have a subsoil that extends to a depth of more than 60 inches
- Orangeburg soils, which are in positions similar to those of the Nankin and Cowarts soils or slightly lower and have a subsoil that extends to a depth of more than 60 inches

Characteristics of the Nankin Soil

Landform: Interfluves and hillslopes
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Moderately slow
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 4e

Typical profile
Surface layer:
0 to 4 inches—very dark grayish brown loamy sand
Subsoil:
4 to 10 inches—dark yellowish brown sandy loam

10 to 16 inches—yellowish brown sandy clay loam that has strong brown mottles
16 to 34 inches—yellowish red sandy clay
34 to 39 inches—yellowish red sandy clay that has red mottles
39 to 44 inches—strong brown sandy clay loam that has yellowish red mottles

Substratum:
44 to 48 inches—yellowish brown sandy loam that has red mottles
48 to 55 inches—yellowish brown sandy loam that has red mottles
55 to 80 inches—yellowish brown sandy loam that has light brownish gray and red mottles

Characteristics of the Cowarts Soil

Landform: Interfluves and hillslopes
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Slow
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 4e

Typical profile

Surface layer:
0 to 3 inches—dark grayish brown loamy sand
3 to 7 inches—brown loamy sand

Subsoil:
7 to 15 inches—yellowish brown sandy loam
15 to 22 inches—brownish yellow sandy clay loam
22 to 31 inches—brownish yellow sandy clay loam that has yellowish red mottles
31 to 40 inches—brownish yellow sandy clay loam that has yellowish red and strong brown mottles

Substratum:
40 to 48 inches—brownish yellow sandy loam that has yellowish red mottles
48 to 59 inches—brownish yellow sandy loam that has pale brown mottles
59 to 80 inches—brownish yellow, light yellowish brown, and yellowish red stratified loamy sand

NcF—Nankin-Cowarts complex, 15 to 35 percent slopes

Map Unit Composition

Major components
Nankin and similar soils: About 60 percent
Cowarts and similar soils: About 25 percent

Minor components
- Faceville soils, which are in positions similar to those of the Nankin and Cowarts soils or slightly higher and have a subsoil that extends to a depth of more than 60 inches
- Greenville soils, which are in positions similar to those of the Nankin and Cowarts soils or slightly higher and have a subsoil that extends to a depth of more than 60 inches
- Orangeburg soils, which are in positions similar to those of the Nankin and Cowarts soils or slightly lower and have a subsoil that extends to a depth of more than 60 inches

Characteristics of the Nankin Soil

Landform: Interfluves and hillslopes
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Moderately slow
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 6e

Typical profile
Surface layer:
0 to 4 inches—very dark grayish brown loamy sand
Subsoil:
4 to 10 inches—dark yellowish brown sandy loam
10 to 16 inches—yellowish brown sandy clay loam that has strong brown mottles
16 to 34 inches—yellowish red sandy clay
34 to 39 inches—yellowish red sandy clay that has red mottles
39 to 44 inches—strong brown sandy clay loam that has yellowish red mottles
Substratum:
44 to 48 inches—yellowish brown sandy loam that has red mottles
48 to 55 inches—yellowish brown sandy loam that has red mottles
55 to 80 inches—yellowish brown sandy loam that has light brownish gray and red mottles

Characteristics of the Cowarts Soil

Landform: Broad interstream divides
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Slow
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 6e

Typical profile
Surface layer:
0 to 3 inches—dark grayish brown loamy sand
3 to 7 inches—brown loamy sand
Subsoil:
7 to 15 inches—yellowish brown sandy loam
15 to 22 inches—brownish yellow sandy clay loam
22 to 31 inches—brownish yellow sandy clay loam that has yellowish red mottles
31 to 40 inches—brownish yellow sandy clay loam that has yellowish red and strong brown mottles
Substratum:
40 to 48 inches—brownish yellow sandy loam that has yellowish red mottles
48 to 59 inches—brownish yellow sandy loam that has pale brown mottles
59 to 80 inches—brownish yellow, light yellowish brown, and yellowish red stratified loamy sand

NoA—Norfolk loamy sand, 0 to 2 percent slopes

Map Unit Composition

Major components
Norfolk and similar soils: About 85 percent

Minor components
- Orangeburg soils, which are in positions similar to those of the Norfolk soil or slightly higher and have a subsoil with a redder hue
- Nankin soils, which are in the lower positions, have a clayey subsoil, and have a thinner solum than that of the Norfolk soil

Characteristics of the Norfolk Soil

Landform: Broad interstream divides
Parent material: Marine deposits
Drainage class: Well drained
Seasonal high water table: Apparent, at a depth of about 4 to 6 feet
Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 1

Typical profile
Surface layer:
0 to 6 inches—brown loamy sand
Subsoil:
6 to 10 inches—brownish yellow sandy loam
10 to 30 inches—yellowish brown sandy clay loam
30 to 55 inches—brownish yellow sandy clay loam
55 to 70 inches—brownish yellow sandy clay loam that has light brownish gray, strong brown, and yellowish red mottles
70 to 80 inches—yellowish brown sandy loam that has brownish yellow, light brownish gray, red, and strong brown mottles

NoB—Norfolk loamy sand, 2 to 5 percent slopes

Map Unit Composition

Major components
Norfolk and similar soils: About 80 percent

Minor components
- Orangeburg soils, which are in positions similar to those of the Norfolk soil or slightly higher and have a subsoil with a redder hue
- Nankin soils, which are in the lower positions, have a clayey subsoil, and have a thinner solum than that of the Norfolk soil

Characteristics of the Norfolk Soil

Landform: Broad interstream divides
Parent material: Marine deposits
Drainage class: Well drained
Seasonal high water table: Apparent, at a depth of about 4 to 6 feet
Flooding: None

Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 2e

Typical profile
Surface layer:
0 to 6 inches—brown loamy sand
Subsoil:
6 to 10 inches—brownish yellow sandy loam
10 to 30 inches—yellowish brown sandy clay loam
30 to 55 inches—brownish yellow sandy clay loam
55 to 70 inches—brownish yellow sandy clay loam that has light brownish gray, strong brown, and yellowish red mottles
70 to 80 inches—yellowish brown sandy loam that has brownish yellow, light brownish gray, red, and strong brown mottles

OBB—Ochlockonee, Iuka, and Bibb soils, 0 to 5 percent slopes, frequently flooded

Map Unit Composition

Major components
Ochlockonee and similar soils: About 35 percent
Iuka and similar soils: About 25 percent
Bibb and similar soils: About 20 percent

Minor components
- Goldsboro soils, which are in positions similar to those of the major soils and are moderately well drained
- Ocilla soils, which are in upland positions and are somewhat poorly drained
- Rains soils, which are in upland positions and are poorly drained

Characteristics of the Ochlockonee Soil

Landform: Flood plains
Parent material: Loamy alluvium
Drainage class: Well drained
Seasonal high water table: Apparent, at a depth of about 3 to 5 feet
Flooding: Frequent
Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 4w

Typical profile
Surface layer:
0 to 4 inches—very dark grayish brown loamy sand
Underlying material:
4 to 32 inches—brownish yellow, light yellowish brown, and yellowish red stratified sand to sandy loam
32 to 62 inches—brownish yellow, pale brown, light yellowish brown, and very pale brown fine sandy loam
62 to 80 inches—gray and light gray loamy sand that has brownish yellow mottles

Characteristics of the Iuka Soil

Landform: Flood plains
Parent material: Alluvium
Drainage class: Moderately well drained
Seasonal high water table: Apparent, at a depth of about 1 to 3 feet
Flooding: Frequent
Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 4w

Typical profile
Surface layer:
0 to 3 inches—dark grayish brown loamy fine sand
Underlying material:
3 to 20 inches—yellowish brown, strong brown, and brownish yellow stratified fine sand to fine sandy loam
20 to 34 inches—pale brown and light yellowish brown fine sandy loam that has light brownish gray and brownish yellow mottles
34 to 80 inches—light gray and gray fine sandy loam that has reddish yellow, yellowish red, and light yellowish brown mottles

Characteristics of the Bibb Soil

Landform: Flood plains
Parent material: Alluvium
Drainage class: Poorly drained
Seasonal high water table: Apparent, at a depth of about $^{1}/_{2}$ to 1 foot
Flooding: Frequent
Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 6w

Typical profile
Surface layer:
0 to 5 inches—very dark gray fine sandy loam
Underlying material:
5 to 8 inches—dark gray loam that has strong brown mottles
8 to 13 inches—dark gray sandy loam that has strong brown mottles
13 to 21 inches—light brownish gray sandy loam that has light yellowish brown, brownish yellow, and pale brown mottles
21 to 27 inches—gray sandy loam that has light yellowish brown mottles
27 to 45 inches—very dark gray sandy loam
45 to 63 inches—very dark gray and light brownish gray stratified sand to sandy loam
63 to 80 inches—dark gray loamy sand

OcA—Ocilla loamy sand, 0 to 2 percent slopes

Map Unit Composition

Major components
Ocilla and similar soils: About 80 percent

Minor components

- Cowarts soils, which are in the higher positions, are well drained, and have a solum that is less than 40 inches thick
- Goldsboro soils, which are in the higher positions and are moderately well drained
- Kinston and Bibb soils, which are in the lower positions on flood plains and are poorly drained
- Norfolk soils, which are in the higher positions and are well drained
- Rains soils, which are in the lower positions and are poorly drained

Characteristics of the Ocilla Soil

Landform: Stream terraces
Parent material: Sandy and loamy marine deposits
Drainage class: Somewhat poorly drained
Seasonal high water table: Apparent, at a depth of about 1 to $2^1/_2$ feet
Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: Low
Depth class: Very deep
Land capability classification: 3w

Typical profile
Surface layer:
0 to 10 inches—grayish brown loamy sand
Subsurface layer:
10 to 24 inches—light brownish gray loamy sand
Subsoil:
24 to 32 inches—yellowish brown sandy clay loam that has light brownish gray and strong brown mottles
32 to 40 inches—light brownish gray sandy clay loam that has yellowish red and strong brown mottles
40 to 58 inches—light brownish gray sandy clay loam that has red and strong brown mottles
58 to 72 inches—light brownish gray sandy clay loam that has brownish yellow mottles

OeA—Orangeburg loamy sand, 0 to 2 percent slopes

Map Unit Composition

Major components
Orangeburg and similar soils: About 90 percent

Minor components

- Faceville soils, which are in positions similar to those of the Orangeburg soil or slightly higher and have a clayey subsoil
- Nankin soils, which are in the lower positions, have a clayey subsoil, and have a thinner solum than that of the Orangeburg soil
- Norfolk soils, which are in positions similar to those of the Orangeburg soil or slightly lower and have a subsoil with a yellower hue
- Red Bay soils, which are in positions similar to those of the Orangeburg soil and have a subsoil with a redder hue

Characteristics of the Orangeburg Soil

Landform: Broad interstream divides
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 1

Typical profile
Surface layer:
0 to 7 inches—dark brown loamy sand
Subsoil:
7 to 12 inches—yellowish red sandy loam
12 to 22 inches—red sandy clay loam
22 to 80 inches—red sandy clay loam

OeB—Orangeburg loamy sand, 2 to 5 percent slopes

Map Unit Composition

Major components
Orangeburg and similar soils: About 85 percent

Minor components
- Faceville soils, which are in positions similar to those of the Orangeburg soil or slightly higher and have a clayey subsoil
- Nankin soils, which are in the lower positions, have a clayey subsoil, and have a thinner solum than that of the Orangeburg soil
- Norfolk soils, which are in positions similar to those of the Orangeburg soil or slightly lower and have a subsoil with a yellower hue
- Red Bay soils, which are in positions similar to those of the Orangeburg soil and have a subsoil with a redder hue

Characteristics of the Orangeburg Soil

Landform: Broad interstream divides (fig. 4)
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 2e

Typical profile
Surface layer:
0 to 7 inches—dark brown loamy sand
Subsoil:
7 to 12 inches—yellowish red sandy loam
12 to 22 inches—red sandy clay loam
22 to 80 inches—red sandy clay loam

Figure 4.—Cotton growing in an area of Orangeburg loamy sand, 2 to 5 percent slopes.

OgC2—Orangeburg sandy loam, 5 to 8 percent slopes, eroded

Map Unit Composition

Major components
Orangeburg and similar soils: About 85 percent

Minor components
- Cowarts soils, which are in positions similar to those of the Orangeburg soil or lower and have a thinner solum
- Faceville soils, which are in positions similar to those of the Orangeburg soil or slightly higher and have a clayey subsoil
- Nankin soils, which are in the lower positions, have a clayey subsoil, and have a thinner solum than that of the Orangeburg soil
- Norfolk soils, which are in positions similar to those of the Orangeburg soil or slightly lower and have a subsoil with a yellower hue
- Red Bay soils, which are in positions similar to those of the Orangeburg soil and have a subsoil with a redder hue

Characteristics of the Orangeburg Soil

Landform: Broad interstream divides
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: Moderate

Depth class: Very deep
Land capability classification: 3e

Typical profile
Surface layer:
0 to 5 inches—dark brown loamy sand
Subsoil:
5 to 12 inches—yellowish red sandy loam
12 to 22 inches—red sandy clay loam
22 to 80 inches—red sandy clay loam

OgD2—Orangeburg sandy loam, 8 to 15 percent slopes, eroded

Map Unit Composition

Major components
Orangeburg and similar soils: About 80 percent

Minor components
- Cowarts soils, which are in positions similar to those of the Orangeburg soil or lower and have a thinner solum
- Faceville soils, which are in positions similar to those of the Orangeburg soil or slightly higher and have a clayey subsoil
- Nankin soils, which are in the lower positions, have a clayey subsoil, and have a thinner solum than that of the Orangeburg soil
- Norfolk soils, which are in positions similar to those of the Orangeburg soil or slightly lower and have a subsoil with a yellower hue
- Red Bay soils, which are in positions similar to those of the Orangeburg soil and have a subsoil with a redder hue

Characteristics of the Orangeburg Soil

Landform: Broad interstream divides
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 4e

Typical profile
Surface layer:
0 to 5 inches—dark brown loamy sand
Subsoil:
5 to 12 inches—yellowish red sandy loam
12 to 22 inches—red sandy clay loam
22 to 80 inches—red sandy clay loam

RaA—Rains sandy loam, 0 to 2 percent slopes, occasionally flooded

Map Unit Composition

Major components
Rains and similar soils: About 80 percent

Minor components

- Bibb and Kinston soils, which are in the lower positions and are subject to flooding
- Grady soils, which are in positions similar to those of the Rains soil and have a clayey subsoil
- Ocilla soils, which are in the higher positions, are somewhat poorly drained, and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches

Characteristics of the Rains Soil

Landform: Stream terraces and depressions
Parent material: Loamy alluvium and loamy marine deposits
Drainage class: Poorly drained
Seasonal high water table: Apparent, at the surface to a depth of about 1 foot
Flooding: Occasional
Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 5w

Typical profile
Surface layer:
0 to 8 inches—very dark grayish brown sandy loam
Subsoil:
8 to 26 inches—gray sandy clay loam
26 to 38 inches—gray sandy clay loam that has yellowish red and strong brown mottles
38 to 48 inches—gray sandy clay loam that has yellowish red and strong brown mottles
48 to 52 inches—gray sandy clay loam that has yellowish red and strong brown mottles
52 to 72 inches—gray sandy clay loam

ReA—Red Bay loamy sand, 0 to 2 percent slopes

Map Unit Composition

Major components
Red Bay and similar soils: About 90 percent

Minor components

- Greenville soils, which are in positions similar to those of the Red Bay soil or slightly higher and have a clayey subsoil
- Lucy soils, which are on side slopes adjacent to the Red Bay soil and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Nankin soils, which are in the lower positions, have a clayey subsoil, and have a thinner solum than that of the Red Bay soil
- Orangeburg soils, which are in positions similar to those of the Red Bay soil and have a yellowish red subsoil

Characteristics of the Red Bay Soil

Landform: Broad interstream divides
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None

Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 1

Typical profile
Surface layer:
0 to 8 inches—dark reddish brown loamy sand
Subsoil:
8 to 40 inches—dark red sandy loam
40 to 80 inches—dark red sandy clay loam

ReB—Red Bay loamy sand, 2 to 5 percent slopes

Map Unit Composition

Major components
Red Bay and similar soils: About 85 percent

Minor components
- Greenville soils, which are in positions similar to those of the Red Bay soil or slightly higher and have a clayey subsoil
- Lucy soils, which are on side slopes adjacent to the Red Bay soil and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Nankin soils, which are in the lower positions, have a clayey subsoil, and have a thinner solum than that of the Red Bay soil
- Orangeburg soils, which are in positions similar to those of the Red Bay soil and have a yellowish red subsoil

Characteristics of the Red Bay Soil

Landform: Broad interstream divides
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 2e

Typical profile
Surface layer:
0 to 8 inches—dark reddish brown loamy sand
Subsoil:
8 to 40 inches—dark red sandy loam
40 to 80 inches—dark red sandy clay loam

RsC2—Red Bay sandy loam, 5 to 8 percent slopes, eroded

Map Unit Composition

Major components
Red Bay and similar soils: About 85 percent

Minor components

- Cowarts soils, which are in positions similar to those of the Red Bay soil or slightly lower and have a thinner solum
- Greenville soils, which are in positions similar to those of the Red Bay soil or slightly higher and have a clayey subsoil
- Lucy soils, which are on side slopes adjacent to the Red Bay soil and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Nankin soils, which are in the lower positions, have a clayey subsoil, and have a thinner solum than that of the Red Bay soil
- Orangeburg soils, which are in positions similar to those of the Red Bay soil and have a yellowish red subsoil

Characteristics of the Red Bay Soil

Landform: Broad interstream divides
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 3e

Typical profile
Surface layer:
0 to 8 inches—dark reddish brown loamy sand
Subsoil:
8 to 40 inches—dark red sandy loam
40 to 80 inches—dark red sandy clay loam

RsD2—Red Bay sandy loam, 8 to 15 percent slopes, eroded

Map Unit Composition

Major components
Red Bay and similar soils: About 80 percent

Minor components

- Cowarts soils, which are in positions similar to those of the Red Bay soil or slightly lower and have a thinner solum
- Greenville soils, which are in positions similar to those of the Red Bay soil or slightly higher and have a clayey subsoil
- Lucy soils, which are on side slopes adjacent to the Red Bay soil and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Nankin soils, which are in the lower positions, have a clayey subsoil, and have a thinner solum than that of the Red Bay soil
- Orangeburg soils, which are in positions similar to those of the Red Bay soil and have a yellowish red subsoil

Characteristics of the Red Bay Soil

Landform: Broad interstream divides
Parent material: Marine deposits
Drainage class: Well drained

Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 4e

Typical profile
Surface layer:
0 to 8 inches—dark reddish brown loamy sand
Subsoil:
8 to 40 inches—dark red sandy loam
40 to 80 inches—dark red sandy clay loam

SuC2—Sunsweet sandy loam, 2 to 8 percent slopes, eroded

Map Unit Composition

Major components
Sunsweet and similar soils: About 80 percent

Minor components
- Tifton soils, which are in positions similar to those of the Sunsweet soil, have 18 to 35 percent clay in the control section, and have plinthite at a depth of more than 15 inches
- Cowarts soils, which are in positions similar to those of the Sunsweet soil and have less than 35 percent clay in the control section
- Orangeburg soils, which are in positions similar to those of the Sunsweet soil, do not contain plinthite, and have less than 35 percent clay in the control section
- Faceville soils, which are in positions similar to those of the Sunsweet soil, are redder, and do not contain plinthite

Characteristics of the Sunsweet Soil

Landform: Hillslopes
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Moderately slow
Available water capacity: Low
Depth class: Very deep
Land capability classification: 4e

Typical profile
Surface layer:
0 to 4 inches—brown sandy loam
Subsoil:
4 to 20 inches—red sandy clay
20 to 35 inches—red sandy clay that has dark red, red, and yellowish brown mottles
35 to 60 inches—red sandy clay that has dark red, yellowish red, very pale brown, light gray, and yellowish brown mottles

SuD2—Sunsweet sandy loam, 8 to 12 percent slopes, eroded

Map Unit Composition

Major components
Sunsweet and similar soils: About 80 percent

Minor components
- Tifton soils, which are in positions similar to those of the Sunsweet soil, have 18 to 35 percent clay in the control section, and have plinthite at a depth of more than 15 inches
- Cowarts soils, which are in positions similar to those of the Sunsweet soils and have less than 35 percent clay in the control section
- Orangeburg soils, which are in positions similar to those of the Sunsweet soil, do not contain plinthite, and have less than 35 percent clay in the control section
- Faceville soils, which are in positions similar to those of the Sunsweet soil, are redder, and do not contain plinthite

Characteristics of the Sunsweet Soil

Landform: Hillslopes
Parent material: Marine deposits
Drainage class: Well drained
Flooding: None
Ponding: None
Permeability: Moderately slow
Available water capacity: Low
Depth class: Very deep
Land capability classification: 6e

Typical profile
Surface layer:
0 to 4 inches—brown sandy loam
Subsoil:
4 to 20 inches—red sandy clay
20 to 35 inches—red sandy clay that has dark red, red, and yellowish brown mottles
35 to 60 inches—sandy clay that has dark red, yellowish red, very pale brown, light gray, and yellowish brown mottles

TfB2—Tifton sandy loam, 2 to 5 percent slopes, eroded

Map Unit Composition

Major components
Tifton and similar soils: About 80 percent

Minor components
- Orangeburg soils, which are in positions similar to those of the Tifton soil or slightly higher and have a subsoil with a redder hue
- Nankin soils, which are in the higher positions, have a clayey subsoil, and have a thinner solum than that of the Tifton soil

Characteristics of the Tifton Soil

Landform: Broad interstream divides
Parent material: Marine deposits

Drainage class: Well drained
Seasonal high water table: Perched, at a depth of about 3$^1/_2$ to 6 feet
Flooding: None
Ponding: None
Permeability: Moderately slow
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 2e

Typical profile
Surface layer:
0 to 5 inches—brown sandy loam
Subsoil:
5 to 9 inches—brown sandy loam
9 to 32 inches—strong brown sandy clay loam
32 to 42 inches—yellowish brown sandy clay loam that has red mottles
42 to 80 inches—yellowish brown sandy clay loam that has light gray, strong brown, and red mottles

TfC2—Tifton sandy loam, 5 to 8 percent slopes, eroded

Map Unit Composition

Major components
Tifton and similar soils: About 80 percent

Minor components
- Orangeburg soils, which are in positions similar to those of the Tifton soil or slightly higher and have a subsoil with a redder hue
- Nankin soils, which are in the higher positions, have a clayey subsoil, and have a thinner solum than that of the Tifton soil

Characteristics of the Tifton Soil

Landform: Broad interstream divides
Parent material: Marine deposits
Drainage class: Well drained
Seasonal high water table: Perched, at a depth of about 3$^1/_2$ to 6 feet
Flooding: None
Ponding: None
Permeability: Moderately slow
Available water capacity: Moderate
Depth class: Very deep
Land capability classification: 3e

Typical profile
Surface layer:
0 to 5 inches—brown sandy loam
Subsoil:
5 to 9 inches—brown sandy loam
9 to 32 inches—strong brown sandy clay loam
32 to 42 inches—yellowish brown sandy clay loam that has red mottles
42 to 80 inches—yellowish brown sandy clay loam that has light gray, strong brown, and red mottles

TrB—Troup loamy sand, 0 to 5 percent slopes

Map Unit Composition

Major components
Troup and similar soils: About 80 percent

Minor components
- Lucy soils, which are in positions similar to those of the Troup soil or slightly lower and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Orangeburg soils, which are in positions similar to those of the Troup soil or slightly lower and do not have thick, sandy surface and subsurface layers

Characteristics of the Troup Soil

Landform: Broad interstream divides (fig. 5)
Parent material: Marine deposits
Drainage class: Somewhat excessively drained
Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: Very low
Depth class: Very deep
Land capability classification: 3s

Typical profile
Surface layer:
0 to 9 inches—brown loamy sand
Subsurface layer:
9 to 50 inches—strong brown loamy sand
50 to 60 inches—yellowish red loamy sand
Subsoil:
60 to 80 inches—red sandy loam

Figure 5.—Snap beans in an area of Troup loamy sand, 0 to 5 percent slopes. The extent of vegetable crop production is increasing in Webster County.

TrD—Troup loamy sand, 5 to 15 percent slopes

Map Unit Composition

Major components
Troup and similar soils: About 80 percent

Minor components
- Lucy soils, which are in positions similar to those of the Troup soil or slightly lower and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Orangeburg soils, which are in positions similar to those of the Troup soil or slightly lower and do not have thick, sandy surface and subsurface layers

Characteristics of the Troup Soil

Landform: Broad interstream divides
Parent material: Marine deposits
Drainage class: Somewhat excessively drained
Flooding: None
Ponding: None
Permeability: Moderate
Available water capacity: Very low
Depth class: Very deep
Land capability classification: 4s

Typical profile
Surface layer:
0 to 9 inches—brown loamy sand
Subsurface layer:
9 to 50 inches—strong brown loamy sand
50 to 60 inches—yellowish red loamy sand
Subsoil:
60 to 80 inches—red sandy loam

W—Water

This map unit consists of areas of open water, such as lakes, ponds, rivers, and streams.

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as rangeland and forestland; and as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, and playgrounds.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited, somewhat limited,* and *very limited*. The suitability ratings are expressed as *well suited, moderately suited, poorly suited,* and *unsuited* or as *good, fair,* and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate

gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, and the system of land capability classification used by the Natural Resources Conservation Service is explained.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Crops

Sherry Carlson, resource soil scientist, Natural Resources Conservation Service, help prepared this section.

Soil erosion by water is a potential hazard on most of the cropland in the survey area. It can be quite significant on land where the slope is more than 3 percent, especially if conventional tillage is used. Erosion is damaging for two major reasons: it reduces soil productivity and causes sedimentation through runoff. Sedimentation results in the pollution of ponds, streams, and wetlands; a decreased water-holding capacity of watersheds; and an increased hazard of flooding.

Many of the soils used as cropland in the survey area have a relatively shallow surface layer. The surface layer contains organic matter and soil organisms needed to maintain soil quality, soil function, and tilth. Conventional tillage can reduce the natural ability of the soil to function by volatilizing organic carbon, disturbing soil structure and porosity, and disrupting soil biology. Conventional tillage also leaves the loose, bare surface of the soil vulnerable to erosion. As the depth of the surface layer is reduced by erosion, the upper part of the subsoil may become incorporated into the plow layer. This is especially damaging on the productivity of soils that have a shallow surface layer and a clayey subsoil. On such soils, tilling or preparing a good seedbed is difficult in spots where the surface has become clayey because the original, friable topsoil has eroded away. Such clayey spots are known locally as “galls.”

Loss of topsoil by water erosion can also increase sedimentation in ponds, streams, and wetlands, ultimately endangering wildlife habitat and threatening water quality for fish, wildlife, livestock, and humans. As sediment is deposited on flood plains, in stream beds, and on pond bottoms, it reduces the water-holding capacity of the watershed, potentially resulting in a greater hazard of flooding for surrounding areas. Erosion-control practices provide a protective surface cover, reduce the volume and velocity of runoff, and increase the rate and extent of infiltration. A cropping system that keeps a cover on the soil for extended periods can keep soil erosion losses to a minimum, maintain soil productivity, and protect adjacent ponds and streams from excess sedimentation. On livestock farms, including legumes and grass forage crops in the cropping system helps to control erosion in sloping areas, increases the nitrogen level in the soil, and improves tilth for the following crop.

Terraces and diversions reduce the length of a slope and help to control the movement of water across the field, thereby minimizing runoff and protecting valuable topsoil from erosion. Terraces and diversions are most practical on deep, well drained soils that have a smooth slope. Gently sloping areas of Faceville, Greenville, Norfolk, Orangeburg, Red Bay, and Tifton soils are suitable for terraces. Grassed waterways

and underground outlets provide outlets for the terraces and diversions. Soils that have short, choppy slopes are not suitable for terraces. On such soils, a cropping system that provides substantial ground cover is needed to reduce the hazard of erosion. Mechanical practices, such as terraces, waterways, and diversions, work best on upland soils that have 2 to 7 percent slopes.

Residue management, conservation tillage, cover crops, contour farming, strip cropping, crop rotation, and a sod-based rotation are effective on all of the soils used as cropland in the survey area. These practices provide ground cover, increase the rate of water infiltration, help to control runoff, and reduce the hazard of erosion. “No-till” and “strip-till,” which are forms of conservation tillage, are becoming increasingly common in the survey area. Most of the soils used as cropland are subject to erosion, especially if they are plowed in the fall and left bare until spring. Winter cover crops should be planted if cropland is plowed in the fall.

Wind erosion is also a concern on cropland. Many of the soils used as cropland in the survey area have a sandy or coarse-textured surface layer that is susceptible to wind erosion. Damage to the soil occurs if the winds are strong and the soil is dry and lacks vegetation or surface mulch. Soil blowing can also damage young seedlings. Maintaining crop residue on the surface, planting cover crops, and using a conservation tillage system can minimize the damage caused by soil blowing.

Bottomland soils in the survey area include Bibb, Grady, Kinston, Ochlockonee, Iuka, and Rains soils. The production of crops and pasture plants is generally not recommended for these bottomland soils. Bottomland soils are subject to flooding along streams and to ponding in depressional areas. Caution should used be if these soils are considered for crops or pasture. Land clearing activities and the installation and management of drainage systems may require special permits and restrictive specifications to remain in compliance with wetland regulations. Wetlands are important natural resources that provide water recharge areas, improve water quality, and support habitat for many species of game and nongame wildlife. Information regarding conservation and management practices for each kind of soil is available at the local office of the Natural Resources Conservation Service.

Natural fertility is low in most of the upland soils in the survey area. Most of the soils in the survey area are naturally acid. The upland soils typically range from strongly acid to very strongly acid in their natural state. Because of the acidity, applications of ground limestone are needed for good growth of legumes and other crops. Available phosphorus and potash levels are naturally low in most of these soils. Applications of lime, fertilizer, and organic wastes should be based on the results of soil testing, a realistic projection of crop yields, waste analysis, and a comprehensive nutrient management plan. Management that increases the content of organic matter in the soil and promotes proper functioning of nutrient-cycling organisms can minimize the need for lime and chemical fertilizers. Comprehensive nutrient management plans provide recommendations that are beneficial to the crop, profitable to the grower, and compatible with the environment. The Cooperative Extension Service and the Natural Resources Conservation Service can provide information concerning nutrient management plans.

The content of organic matter in the soil is an important factor affecting water infiltration, erosion, crust formation, fertility, germination, and root growth. An adequate amount of organic matter in the surface layer enables the soil to absorb and hold more water, reducing runoff and the hazard of erosion. The content of organic matter is especially important on soils that have a sandy topsoil.

Most of the soils used for crops in the survey area have a surface layer of loamy sand (except where eroded) and a naturally low content of organic matter. Generally, the structure of these soils is poor and a crust forms on the surface following rainfall. This crust is hard when dry, reduces the rate of water infiltration, hinders germination and plant growth, and increases the runoff rate. Long-term use of conservation

practices improves soil structure and minimizes crusting. Examples include residue management, conservation tillage, strip-cropping, a rotation that includes grasses and legumes, and regular additions of manure and other organic material. Soils that have an adequate content of organic matter are porous, have good tilth, and are productive.

The commonly grown crops in the survey area are cotton, corn, peanuts, soybeans, and wheat. Specialty crops are sweet corn, field peas, squash, watermelons, cantaloupes, other small fruits, and nursery plants. Deep, upland soils that have good natural drainage and warm up early in the spring are especially well suited to many vegetables and small fruits. Most of the well drained soils in the survey area are also suitable for orchards and nursery plants. Pecans are a significant orchard crop. Soils in low positions—where frost is frequent, drainage is poor, and air movement in minimal—generally are poorly suited to early vegetables, small fruits, orchards, and nursery plants. Technical assistance and information about specialty crops are available from the University of Georgia Cooperative Extension Service and other agricultural agencies.

Irrigation is commonly used in the county for the production of row crops, orchard crops, and specialty crops. The major sources of water for irrigation are subsurface water from deep wells and surface water from streams and ponds (fig. 6). Subsurface drip irrigation is just beginning to be used in the area, specifically for orchard and specialty crops.

Even in rural areas, such as Webster County, urban development and other land uses can compete with agriculture for land. Land that is well suited to crop production is commonly developed for urban uses. Prime farmland makes up about 37,750 acres in Webster County. Wise land-use planning on a county-wide scale can minimize urban development of prime farmland in the survey area.

Figure 6.—A pond in northern Webster County. The county has many ponds that are used for irrigation, livestock, recreation, and wildlife habitat.

Pasture and Hayland

By Dennis Chessman, grazing land specialist, Natural Resources Conservation Service

Most of the grasslands in the county are used for forage production. In addition to providing food for grazing animals, grasslands can offer other beneficial ecosystem services. The fibrous structure of grass roots is effective at holding soil in place, reducing the potential for water erosion. The vegetation functions to intercept raindrops that would otherwise impact the soil surface, dislodging particles and deteriorating soil structure. In addition, soils with permanent cover of grass have been shown to sequester as much as 2,000 pounds of carbon per acre each year, making grasslands an excellent sink for excess atmospheric carbon dioxide. Warm-season perennial grasses are the primary forages in the county.

Most of the pastures and hay fields in the county are planted to bermudagrass or bahiagrass, both introduced species. Common bermudagrass, as well as several improved varieties, can be seeded. Coastal bermudagrass and other hybrids, however, do not produce enough viable seed for reproduction and therefore must be established vegetatively. Bermudagrass can provide excellent grazing and hay. Bahiagrass is typically used for pasture, although newer, high-yielding varieties have the potential to be used as a productive hay crop. Bahiagrass is slightly less drought-tolerant than bermudagrass, especially on deep sandy soils, but is highly tolerant of saturated soils. Most varieties of bermudagrass are not adapted to poorly drained conditions.

The county is south of the primary range of adaptation for tall fescue. Tall fescue, therefore, is not considered an important forage crop, even though it grows on some bottomlands and in other sheltered areas that are not regularly grazed.

Native warm-season grasses, such as switchgrass, eastern gamagrass, Indiangrass, and little bluestem, are adapted to conditions in the county and able to provide high-quality spring grazing. These species, however, are not widely used for forage production. Unlike the introduced forage grasses, which are relatively tolerant of continuous grazing, the native warm-season grasses must be rotationally stocked and minimum grazing heights must be rigorously maintained in order to prevent stand loss. In addition, they will not produce as much hay as bermudagrass.

Competition from weeds can be a problem in fields where thinning of the stand or death of the forage has allowed undesirable plants to become established. Management- and environment-related factors that can contribute to poor forage growth and favorable conditions for weed establishment include decreased soil fertility, low soil pH, improper grazing or harvest management, and extended drought. All but the last factor can be controlled. Selective use of herbicides may be necessary if undesirable plants become established and reach threshold population levels.

Most of the soils in the county are highly weathered and naturally acidic. Applying fertilizer and lime on the basis of periodic soil testing with consideration for yield goals helps to ensure vigorous forage growth. The efficiency of fertilizer can be improved by applying limestone to soils with pH below 6.0. If other environmental conditions for growth are favorable, yields of bahiagrass and bermudagrass can be significantly increased by applying nitrogen fertilizer. Hybrid bermudagrass varieties in particular are highly responsive to fertilizer. The yield potential is at least 8 to 10 tons per acre if nitrogen is supplied throughout the growing season and soil moisture is not limiting. Low levels of potassium in the soil can result in increased susceptibility by bermudagrass to environmental stresses, such as cold, drought, and over-grazing. Such stresses occasionally lead to stand decline or loss, especially if improved varieties are managed for maximum yields of hay.

Proper forage harvest management includes maintaining a minimum after-harvest height and allowing adequate time for regrowth before the plants are mowed or grazed again. Excessive stocking rates can result in plants being grazed too close to the ground and being regrazed before they have enough time to recover from the previous

harvesting. Bermudagrass and bahiagrass should not be harvested to a height of less than 2 inches. Although they are relatively tolerant of the low and frequent grazing that is typically associated with continuous stocking, they perform better if stock density is adjusted as forage growth changes throughout the growing season. Native grasses are much less tolerant of close and frequent harvesting. Generally, they should not be grazed to a height of less than 6 to 8 inches, depending on species. Recovery time after grazing is longer for the native grasses than for the non-native species. Rotational stocking with several paddocks is essential for the maintenance of vigorous, long-term, native warm-season grass pasture. The time necessary for regrowth of any species depends primarily on soil moisture, soil fertility, soil temperature, and harvest height.

An important but somewhat underutilized practice on the Coastal Plain is the establishment of winter pasture by over-seeding dormant, warm-season perennial grass with cool-season annuals in the fall. Benefits of winter pasture include reduced expenses for hay and superior forage nutritive value compared to warm-season grasses. Commonly used winter pasture species include rye, oats, wheat, annual ryegrass, and clovers, such as crimson clover and arrowleaf clover. Livestock producers should give serious consideration to including clovers or other legumes in their forage system. Legumes typically have a high content of crude protein and improve the overall nutritive value of the winter pasture. The bacteria living in association with legume roots provide nitrogen for the plants, thus reducing or eliminating the need for nitrogen fertilizer. Alfalfa is a perennial legume that provides excellent forage. Alfalfa can be grown in the county on well drained soils in which the surface pH can be maintained close to 7.0 and the subsoil pH is 5.5 or higher to a depth of about 4 feet. Although the nutritive value of alfalfa can be excellent, it is adapted to fewer sites and requires more management than other forages commonly grown on the Coastal Plain.

Yields Per Acre

The average yields per acre shown in table 5 are those that can be expected of the principal crops under a high level of management. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations also are considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

For yields of irrigated crops, it is assumed that the irrigation system is adapted to the soils and to the crops grown, that good-quality irrigation water is uniformly applied as needed, and that tillage is kept to a minimum.

Pasture yields are expressed in terms of animal unit months. An animal unit month (AUM) is the amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is

developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in the yields table are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for forestland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit (USDA–SCS, 1961).

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, wildlife habitat, or recreation.

Capability units are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, 2e-4 and 3e-6. These units are not given in this soil survey.

The capability classification of the soils in this survey area is given in the section "Detailed Soil Map Units" and in the yields table.

Prime Farmland and Farmland of Statewide Importance

Table 6 lists the map units in the survey area that are considered prime farmland and farmland of statewide importance. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation's food supply.

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

In some areas, land that does not meet the criteria for prime farmland is considered to be *farmland of statewide importance* for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

Hydric Soils

In this section, hydric soils are defined and described and the hydric soils in the survey area are listed.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the

characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in “Soil Taxonomy” (Soil Survey Staff, 1999) and “Keys to Soil Taxonomy” (Soil Survey Staff, 2006) and in the “Soil Survey Manual” (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in “Field Indicators of Hydric Soils in the United States” (Hurt and Vasilas, 2006).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The following map units meet the definition of hydric soils and, in addition, have at least one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and Vasilas, 2006).

GrA Grady clay loam, ponded
KBA Kinston and Bibb soils, 0 to 1 percent slopes, frequently flooded
RaA Rains sandy loam, 0 to 2 percent slopes, occasionally flooded

The following map units, in general, do not meet the definition of hydric soils because they do not have one of the hydric soil indicators. A portion of these map units, however, may include hydric soils. Onsite investigation is recommended to determine whether hydric soils occur and the location of the included hydric soils.

GoA Goldsboro loamy sand, 0 to 2 percent slopes
OBB Ochlockonee, Iuka, and Bibb soils, 0 to 5 percent slopes, frequently flooded
OcA Ocilla loamy sand, 0 to 2 percent slopes

Forestland Productivity and Management

Keith Wooster, biologist, Natural Resources Conservation Service, helped prepare this section.

Virgin forest once covered most of Webster County. As settlement progressed, the upland, well-drained soils were cleared for cultivation. The soils in the remaining forestland consisted of moderately well drained to poorly drained soils along streams, along wetlands, and on flood plains or deep, excessively drained soils on ridges, uplands, and stream terraces.

Of a total of more than 134,100 acres in Webster County, about 55 percent, or 73,136 acres, is privately owned forestland.

From 1989 through 2007, the percent of forestland declined about 12 percent and the proportion of each forest type changed. The extent of the longleaf/slash pine forest type decreased 23,000 acres (75 percent), loblolly/shortleaf decreased 11,000 acres (55 percent), oak/pine increased 10,000 acres (200 percent), oak/hickory increased 11,000 acres (33 percent), and oak/gum/cypress increased 2,200 acres (40 percent).

In 2007, the most significant forest types included longleaf/slash pine (7,263 acres), loblolly/shortleaf (8,904 acres), oak/pine (18,446 acres), oak/hickory (32,488 acres), and oak/gum/cypress (6,036 acres). Six percent of the forestland was overstocked, 28 percent was fully stocked, 56 percent was medium stocked, and 10 percent was poorly stocked.

Current distribution of pines includes 10 percent that are less than 10 years old and more than 60 percent that are 30 years old or older. The combined distribution of pines and hardwoods includes 25 percent that are less than 10 years old and 28 percent that are 30 years old or older.

Forest production has shifted over the last 10 years from pulpwood to sawtimber. For pines, sawtimber production increased 90 percent while pulpwood production decreased 18 percent. For hardwoods, sawtimber production increased 300 percent while pulpwood production increased by 100 percent.

About 84 percent of the forestland in Webster County is considered fully stocked or medium stocked. The remainder is either over stocked or poorly stocked. Only about 6 percent of the forestland is considered moderately productive; that is, capable of producing, under average management, about 1 to 1.75 cords per acre per year. Fifty percent is capable of producing 0.75 to 1.0 cord per acre per year. Production could be improved on much of the existing forestland by thinning out mature trees and undesirable species. Stands could also be improved by controlling fire, disease, and insects. The Natural Resources Conservation Service, the Georgia Forestry Commission, or the Cooperative Extension Service can help to determine specific needs for forestland management.

A wide variety of soils are used as forestland in the county. Poorly drained to somewhat poorly drained soils, such as Ocilla and Kinston soils, have high potential productivity for timber production, primarily pine. The site index for soils throughout the county generally ranges from 80 to 100 for most suitable species, primarily pine. Several of the more productive soils, however, have moderate equipment limitations due to flooding or wetness. Seedling mortality may be excessive in wet years.

Site index is a measure of forest quality based on the height (in feet) of the dominant trees at a specified age (typically 50 years for natural stands and 25 years for planted stands of pine). Site indexes in this document are for a 50 year time period. For loblolly pine and slash pine, the site index for a 25-year period can be calculated by multiplying the 50-year site index by 0.64.

Well drained soils on uplands have high potential productivity and are best suited to longleaf pine, slash pine, and loblolly pine. Examples are Cowarts, Greenville, Orangeburg, Red Bay, and Faceville soils. The site index for slash pine ranges from 80 to 92. No significant management problems are associated with these soils.

Somewhat excessively drained soils, such as Troup soils, also have relatively high potential productivity for pine. They have a site index of about 80 for loblolly pine and 70 for longleaf pine. These soils, however, have moderate equipment limitations due to the course texture of the surface layer. Also, seedling mortality is a moderate concern because of doughtiness.

The tables described in this section can help forest owners or managers plan the use of soils for wood crops. They show the potential productivity of the soils for wood crops and rate the soils according to the limitations that affect various aspects of forestland management.

Forestland Productivity

In table 7, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the “National Forestry Manual,” which is available in local offices of the Natural Resources Conservation Service or on the Internet (USDA–NRCS, n.d.).

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Trees to manage are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Forestland Management

In tables 8a, 8b, and 8c, interpretive ratings are given for various aspects of forestland management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified aspect of forestland management. *Well suited* indicates that the soil has features that are favorable for the specified management aspect and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified management aspect. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified management aspect. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified management aspect or that extreme measures are needed to overcome the undesirable soil properties.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified aspect of forestland management (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms for seedling mortality are expressed as *low, moderate,* and *high*. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet (USDA–NRCS, n.d.).

Table 8a

Ratings in the columns *suitability for hand planting* and *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *potential for seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality.

Table 8b

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some erosion is likely, that the roads or trails may require occasional maintenance, and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately suited, or poorly suited to this use.

Table 8c

Ratings in the column *suitability for use of harvesting equipment* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, and ponding. The soils are described as well suited, moderately suited, or poorly suited to this use.

The ratings of *suitability for log landings* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The soils are described as well suited, moderately suited, or poorly suited to use as log landings.

Recreational Development

In tables 9a and 9b, the soils of the survey area are rated according to limitations that affect their suitability for recreational development. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations

generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in these tables can be supplemented by other information in this survey, for example, interpretations for dwellings without basements, for local roads and streets, and for septic tank absorption fields.

Table 9a

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Table 9b

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds

should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading “Soil Properties.”

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, reclamation material, roadfill, and topsoil; plan structures for water management; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 10a and 10b show the degree and kind of soil limitations that affect dwellings with and without basements, local roads and streets, and shallow excavations.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Table 10a

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Table 10b

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the

amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Sanitary Facilities

Table 11 shows the degree and kind of soil limitations that affect septic tank absorption fields and sewage lagoons. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If

the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

Construction Materials

Table 12 gives information about the soils as potential sources of sand, roadfill, and topsoil. Normal compaction, minor processing, and other standard construction practices are assumed.

Sand is a natural aggregate suitable for commercial use with a minimum of processing. It is used in many kinds of construction. Specifications for each use vary widely. In the table, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand, the soil is considered a likely source regardless of thickness. The assumption is that the sand layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good, fair,* or *poor* as potential sources of sand. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

In the table, the rating class terms for roadfill and topsoil are *good, fair,* and *poor*. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of roadfill and topsoil. The lower the number, the greater the limitation.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 13 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas and for embankments, dikes, and levees. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering properties, physical and chemical properties, and pertinent soil and water features.

Engineering Soil Properties

Table 14 gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. “Loam,” for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement,

the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

Risk of Corrosion

Table 15 gives estimates of the risk of corrosion caused by soils. The estimates are used in land use planning that involves engineering considerations.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Water Features

Table 16 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or

soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. The table indicates, by month, and depth to the top (*upper limit*) of the saturated zone in most years. Estimates of the upper limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. The table indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Physical and Chemical Properties

Table 17 shows estimates of some physical and chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In the table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^1/_3$- or $^1/_{10}$-bar (33- or 10-kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (Ksat) refers to the ability of a soil to transmit water or air. The term “permeability,” as used in soil surveys, indicates saturated hydraulic conductivity (Ksat). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar (33- or 10-kPa) moisture tension and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In the table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1999 and 2006). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Ultisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udults (*Ud*, meaning humid, plus *ult*, from Ultisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Kandiudults (*Kandi*, meaning low activity, plus *udult*, the suborder of the Ultisols that has a udic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Kandiudults.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, kaolinitic, thermic Typic Kandiudults.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. An example is the Orangeburg series.

Table 18 indicates the order, suborder, great group, subgroup, and family of the soil series in the survey area.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (Soil Survey Division Staff, 1993) and in the “Field Book for Describing and Sampling Soils” (Schoeneberger and others, 2002). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” (Soil Survey Staff, 1999) and in “Keys to Soil Taxonomy” (Soil Survey Staff, 2006). Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

In many instances, the typical pedon for a series is located outside the survey area. The selection of a typical pedon is based on the range of characteristics of the series as it occurs throughout a particular major land resource area. The Benevolence series, for example, is in MLRA 133A (Southern Coastal Plain), which extends from Virginia to eastern Mississippi. The typical pedon described in this section for the Benevolence series is in Randolph County, Georgia.

Benevolence Series

Landform: Broad interstream divides
Parent material: Loamy marine deposits
Drainage class: Well drained
Permeability class: Moderate
Depth class: Very deep
Slope: 0 to 8 percent
Taxonomic classification: Coarse-loamy, kaolinitic, thermic Typic Kandiudults

Geographically Associated Soils

- Lucy soils, which are in positions similar to those of the Benevolence soils and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Orangeburg soils, which are in positions similar to those of the Benevolence soils and have a fine-loamy control section
- Red Bay soils, which are in positions similar to those of the Benevolence soils or slightly higher, have dark red colors in the subsoil, and have a fine-loamy control section
- Troup soils, which are in positions similar to those of the Benevolence soils or slightly higher, are somewhat excessively drained, and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Typical Pedon

Benevolence loamy sand, 0 to 5 percent slopes; in a pine plantation about 3 miles northeast of the town of Benevolence; Randolph County, Georgia; Cuthbert, Georgia, USGS 7.5-minute quadrangle; lat. 31 degrees 54 minutes 33 seconds N. and long. 84 degrees 41 minutes 47 seconds W.

A—0 to 12 inches; brown (7.5YR 4/4) loamy sand; weak fine granular structure; very friable; moderately acid; clear smooth boundary.

Bt1—12 to 37 inches; yellowish red (5YR 5/6) sandy loam; weak coarse subangular blocky structure; friable; common faint clay bridges; moderately acid; gradual wavy boundary.

Bt2—37 to 47 inches; red (2.5YR 4/8) sandy loam; weak medium subangular blocky structure; very friable; many faint clay bridges; moderately acid; gradual wavy boundary.

Bt3—47 to 80 inches; red (2.5YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay bridges; strongly acid.

Range in Characteristics

Thickness of the solum: More than 80 inches
Reaction: Very strongly acid to moderately acid throughout, except where the surface layer has been limed

Ap or A horizon:
Color—hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 3 or 4
Texture—loamy fine sand or loamy sand

E horizon (where present):
Color—hue of 10YR, value of 5 or 6, and chroma of 4
Texture—loamy fine sand or loamy sand

EB horizon (where present):
Color—hue of 7.5YR, value of 5 or 6, and chroma of 5 or 6
Texture—loamy fine sand or loamy sand

BE horizon (where present):
Color—hue of 5YR or 7.5YR, value of 4 to 6, and chroma of 4 to 8
Texture—sandy loam

Bt horizon:
Color—hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8
Texture—fine sandy loam or sandy loam in the upper part; sandy loam or sandy clay loam in the lower part

Bibb Series

Landform: Flood plains
Parent material: Stratified loamy and sandy alluvium
Drainage class: Poorly drained
Permeability class: Moderate
Depth class: Very deep
Slope: 0 to 2 percent
Taxonomic classification: Coarse-loamy, siliceous, active, acid, thermic Typic Fluvaquents

Geographically Associated Soils

- Iuka soils, which are in the higher positions on the flood plains and are moderately well drained
- Kinston soils, which are in positions similar to those of the Bibb soils and have a fine-loamy control section
- Ochlockonee soils, which are in the higher positions on the flood plains and are well drained
- Ocilla soils, which are in upland positions and are somewhat poorly drained
- Rains soils, which are in upland positions and are poorly drained

Typical Pedon

Bibb fine sandy loam in an area of Kinston and Bibb soils, 0 to 1 percent slopes, frequently flooded; about 3,800 feet west of the Randolph and Terrell County line on County Road 155 and 300 feet north; in the flood plain along Ichawaynochaway Creek; Randolph County, Georgia; Parrott, Georgia, USGS 7.5-minute quadrangle; lat. 31 degrees 54 minutes 3 seconds N. and long. 84 degrees 36 minutes 48 seconds W.

A—0 to 5 inches; very dark gray (10YR 3/1) fine sandy loam; weak fine granular structure; very friable; many fine, many medium, and common coarse roots; strongly acid; clear wavy boundary.

Cg1—5 to 8 inches; dark gray (10YR 4/1) loam; massive; very friable; common fine, common medium, and common coarse roots; few fine distinct strong brown (7.5YR 5/6) masses of oxidized iron; strongly acid; clear wavy boundary.

Cg2—8 to 13 inches; dark gray (10YR 4/1) sandy loam; massive; friable; common coarse, few fine, and few medium roots; common medium distinct strong brown (7.5YR 5/6) masses of oxidized iron with diffuse boundaries; common medium distinct light brownish gray (10YR 6/2) iron depletions with diffuse boundaries; strongly acid; clear wavy boundary.

Cg3—13 to 21 inches; light brownish gray (10YR 6/2) sandy loam; massive; friable; common coarse and few medium roots; common medium distinct light yellowish brown (10YR 6/4), brownish yellow (10YR 6/6), and pale brown (10YR 6/3) masses of oxidized iron; very strongly acid; clear wavy boundary.

Cg4—21 to 27 inches; gray (10YR 5/1) sandy loam; massive; friable; few coarse roots; common medium distinct light yellowish brown (10YR 6/4) masses of oxidized iron; very strongly acid; clear wavy boundary.

Ab—27 to 45 inches; very dark gray (10YR 3/1) sandy loam; massive; firm; very strongly acid; clear wavy boundary.

C’g1—45 to 63 inches; very dark gray (10YR 3/1) and light brownish gray (10YR 6/2) stratified sand to sandy loam; massive; friable; strongly acid; clear wavy boundary.

C’g2—63 to 80 inches; dark gray (10YR 4/1) loamy sand; massive; very friable; very strongly acid.

Range in Characteristics

Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 7.5YR or 10YR, value of 2 to 5, and chroma of 1 to 3
Texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or silt loam
Redoximorphic features (where present)—few or common iron depletions in shades of gray and masses of iron accumulation in shades of brown

Ag or Ab horizon (where present):
Color—hue of 10YR or 2.5Y, value of 3 to 7, and chroma of 2 or less; or neutral in hue and value of 3 to 7
Texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or silt loam
Redoximorphic features (where present)—few or common masses of iron accumulation in shades of yellow and brown

Cg and C’g horizons:
Color—hue of 10YR to 5BG, value of 3 to 7, and chroma of 2 or less; or neutral in hue and value of 3 to 7
Texture—upper part: sandy loam, fine sandy loam, or loam or stratified in these textures; lower part: sand, loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam or stratified in these textures
Redoximorphic features—few or common iron depletions in shades of gray and masses of iron accumulation in shades of brown, yellow, and red

Bonneau Series

Landform: Broad interstream divides
Parent material: Sandy and loamy marine deposits
Drainage class: Well drained

Permeability class: Moderate
Depth class: Very deep
Slope: 0 to 8 percent
Taxonomic classification: Loamy, siliceous, subactive, thermic Arenic Paleudults

Geographically Associated Soils

- Lucy soils, which are in slightly higher positions than the Bonneau soils and have a subsoil with a redder hue
- Norfolk soils which are in positions similar to those of the Bonneau soils and do not have thick, sandy surface and subsurface horizons
- Orangeburg soils, which are in positions similar to those of the Bonneau soils and do not have thick, sandy surface and subsurface layers
- Troup soils which are in the slightly higher positions, are somewhat excessively drained, and have sandy surface and subsurface horizons with a combined thickness of 40 to 80 inches

Typical Pedon

Bonneau loamy sand, 0 to 5 percent slopes; about 0.6 mile northwest of Springvale on County Road 31 and 40 feet west of the road; Randolph County, Georgia; Morris, Georgia, USGS 7.5-minute quadrangle; lat. 31 degrees 50 minutes 0 seconds N. and long. 84 degrees 53 minutes 43 seconds W.

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; many fine and medium and few coarse roots; slightly acid; abrupt wavy boundary.

E1—6 to 12 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine granular structure; very friable; many fine and medium roots; slightly acid; gradual wavy boundary.

E2—12 to 22 inches; yellowish brown (10YR 5/4) loamy sand; weak fine granular structure; very friable; common fine and common medium roots; moderately acid; gradual wavy boundary.

E3—22 to 33 inches; yellowish brown (10YR 5/6) loamy sand; weak fine granular structure; very friable; many fine and medium roots; moderately acid; gradual wavy boundary.

Bt1—33 to 52 inches; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; friable; common fine and common medium roots; 3 percent ironstone nodules; moderately acid; gradual wavy boundary.

Bt2—52 to 65 inches; light yellowish brown (10YR 6/4) sandy loam; moderate medium subangular blocky structure; friable; few fine and few medium roots; common medium distinct yellowish brown (10YR 5/6) masses of oxidized iron; common medium distinct very pale brown (10YR 7/3) iron depletions; 3 percent ironstone nodules; moderately acid; gradual wavy boundary.

BC—65 to 72 inches; multicolored, about 35 percent brownish yellow (10YR 6/6), 35 percent light yellowish brown (10YR 6/4), and 30 percent light gray (5Y 7/2) sandy clay; weak medium subangular blocky structure; friable; the brownish yellow and light yellowish brown areas are iron accumulations; the light gray areas are iron depletions; moderately acid.

Range in Characteristics

Thickness of the solum: 60 to more than 80 inches
Thickness of sandy epipedon: 20 to 40 inches
Reaction: Very strongly acid to moderately acid throughout, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 10YR, value of 3 to 5, and chroma of 2 to 4
Texture—loamy sand

E horizon:
Color—hue of 10YR, value of 4 to 6, and chroma of 4 to 6
Texture—loamy sand

Bt horizon, upper part:
Color—hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 6 to 8
Texture—sandy loam or sandy clay loam

Bt horizon, lower part:
Color—hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 3 to 8; or multicolored in shades of red, brown, yellow, or gray
Texture—sandy loam, sandy clay loam, or sandy clay
Redoximorphic features—few or common masses of iron accumulation in shades of brown, red, and yellow; depletions of chroma 2 or less within a depth of 65 inches

BC horizon:
Color—hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 3 to 8; or multicolored in shades of red, brown, yellow, or gray
Texture—sandy loam, sandy clay loam, or sandy clay
Redoximorphic features—few to many iron depletions in shades of gray and few to many masses of iron accumulation in shades of red and brown

Cowarts Series

Landform: Interfluves and hillslopes
Parent material: Loamy marine deposits (fig. 7)
Drainage class: Well drained
Permeability class: Slow
Depth class: Moderately deep
Slope: 2 to 25 percent
Taxonomic classification: Fine-loamy, kaolinitic, thermic Typic Kanhapludults

Geographically Associated Soils

- Lucy soils, which are in positions similar to those of the Cowarts soils or slightly higher and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Nankin soils which are in positions similar to those of the Cowarts soils, have a solum that is less than 60 inches thick, and have a fine control section
- Norfolk soils, which have a subsoil that extends to a depth of more than 40 inches
- Tifton soils, which are in smoother, less dissected positions than those of the Cowarts soils and have more than 5 percent plinthite within a depth of 60 inches
- Troup soils, which are in the higher positions and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Typical Pedon

Cowarts loamy sand in an area of Nankin-Cowarts complex, 15 to 35 percent slopes; about 0.6 mile north of Sharon Church, 2,960 feet south of the Stewart County line, and 3,200 feet west of County Road 28; Randolph County, Georgia; Sanford, Georgia, USGS 7.5-minute quadrangle; lat. 31 degrees 54 minutes 58 seconds N. and long. 84 degrees 53 minutes 30 seconds W.

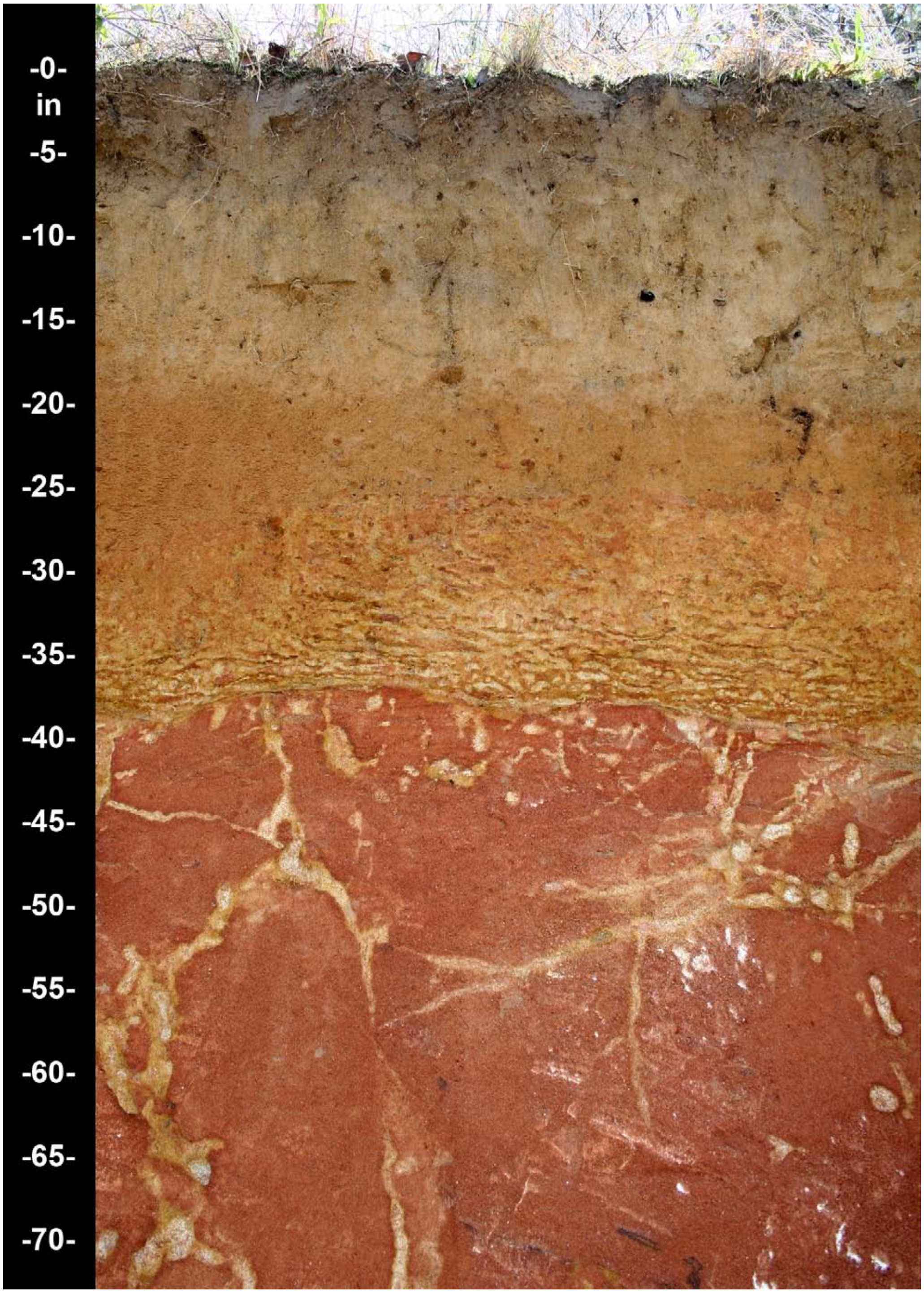


Figure 7.—Profile of a Cowarts soil in an area of Cowarts-Nankin complex, 2 to 5 percent slopes. The Cowarts series is characterized by a shallow solum. The solum extends to a depth of about 35 inches in this profile.

Ap1—0 to 3 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; strongly acid; clear smooth boundary.

Ap2—3 to 7 inches; brown (10YR 4/3) loamy sand; weak fine granular structure; very friable; strongly acid; clear wavy boundary.

Bt1—7 to 15 inches; yellowish brown (10YR 5/6) sandy loam; weak coarse subangular blocky structure; very friable; few faint clay bridges; strongly acid; gradual wavy boundary.
Bt2—15 to 22 inches; brownish yellow (10YR 6/8) sandy clay loam; weak medium subangular blocky structure; friable; common distinct clay films on all faces of peds; strongly acid; gradual wavy boundary.
Bt3—22 to 31 inches; brownish yellow (10YR 6/8) sandy clay loam; moderate medium subangular blocky structure; firm; few distinct clay films on all faces of peds; common medium distinct yellowish red (5YR 5/8) masses of oxidized iron; strongly acid; gradual wavy boundary.
BC—31 to 40 inches; brownish yellow (10YR 6/8) sandy clay loam; weak medium subangular blocky structure; friable; few distinct clay films on all faces of peds; common medium distinct yellowish red (5YR 5/6) and common medium distinct strong brown (7.5YR 5/6) masses of oxidized iron; strongly acid; gradual wavy boundary.
C1—40 to 48 inches; brownish yellow (10YR 6/8) sandy loam; massive; friable; few fine distinct yellowish red (5YR 5/6) masses of oxidized iron; very strongly acid; gradual wavy boundary.
C2—48 to 59 inches; brownish yellow (10YR 6/6) sandy loam; massive; firm; few fine distinct pale brown (10YR 6/3) iron depletions; very strongly acid; gradual wavy boundary.
C3—59 to 80 inches; 50 percent brownish yellow (10YR 6/6), 30 percent light yellowish brown (10YR 6/4), and 20 percent yellowish red (5YR 5/6) loamy sand; single grain; friable; very strongly acid; the brownish yellow and yellowish red areas are masses of iron accumulation.

Range in Characteristics

Thickness of the solum: 20 to 40 inches
Reaction: Very strongly acid to moderately acid throughout, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 4
Texture—loamy sand or sandy loam

E horizon (where present):
Color—hue of 10YR, value of 5 or 6, and chroma of 4 to 6
Texture—loamy sand or sandy loam

BE horizon (where present):
Color—hue of 10YR, value of 5 or 6, and chroma of 4 to 8
Texture—sandy loam

Bt horizon:
Color—hue of 5YR to 10YR, value of 5 or 6, and chroma of 4 to 8
Texture—sandy loam or sandy clay loam
Redoximorphic features—few or common masses of iron accumulation in shades of red, yellow, and brown

BC horizon:
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8; or multicolored in shades of red, yellow, brown, and gray
Texture—sandy loam or sandy clay loam
Redoximorphic features—few to many iron depletions in shades of gray and masses of iron accumulation in shades of red, brown, and yellow

C horizon:
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8; or multicolored in shades of red, yellow, brown, and gray
Texture—loamy sand, sandy loam, or sandy clay loam or stratified in these textures
Redoximorphic features—few to many iron depletions in shades of gray and few to many masses of iron accumulation in shades of red, brown, and yellow

Faceville Series

Landform: Broad interstream divides
Parent material: Clayey marine deposits (fig. 8)
Drainage class: Well drained
Permeability class: Moderate
Depth class: Very deep
Slope: 0 to 8 percent
Taxonomic classification: Fine, kaolinitic, thermic Typic Kandiudults

Geographically Associated Soils

- Greenville soils, which are in positions similar to those of the Faceville soils and have lower color values
- Norfolk soils, which are in positions similar to those of the Faceville soils or slightly lower, have yellower hues, and have a fine-loamy control section
- Orangeburg soils, which are in positions similar to those of the Faceville soils or slightly lower and have a fine-loamy control section
- Red Bay soils, which are in positions similar to those of the Faceville soils, have lower color values, and have a fine-loamy control section

Typical Pedon

Faceville sandy loam, 0 to 2 percent slopes; about 1.8 miles north of the Quitman and Clay County line on Georgia Highway 29 and 700 feet west of the highway; Quitman County, Georgia; Hatcher, Georgia, USGS 7.5-minute quadrangle; lat. 31 degrees 48 minutes 19 seconds N. and long. 85 degrees 5 minutes 42 seconds W.

A—0 to 10 inches; reddish brown (5YR 4/4) sandy loam; weak fine granular structure; very friable; common fine roots; moderately acid; gradual wavy boundary.
Bt1—10 to 30 inches; red (2.5YR 4/6) sandy clay; moderate medium subangular blocky structure; firm; few fine roots; common distinct clay films on all faces of peds; strongly acid; gradual wavy boundary.
Bt2—30 to 72 inches; red (2.5YR 4/6) sandy clay; moderate fine subangular blocky structure; firm; common fine roots; common distinct clay films on all faces of peds; strongly acid; gradual wavy boundary.
Bt3—72 to 80 inches; red (2.5YR 5/6) sandy clay; few fine prominent strong brown (7.5YR 5/6) mottles; moderate fine subangular blocky structure; firm; common fine roots; common distinct clay films on all faces of peds; strongly acid.

Range in Characteristics

Thickness of the solum: More than 65 inches
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 5YR to 10YR, value of 4 or 5, and chroma of 2 to 6
Texture—sandy loam

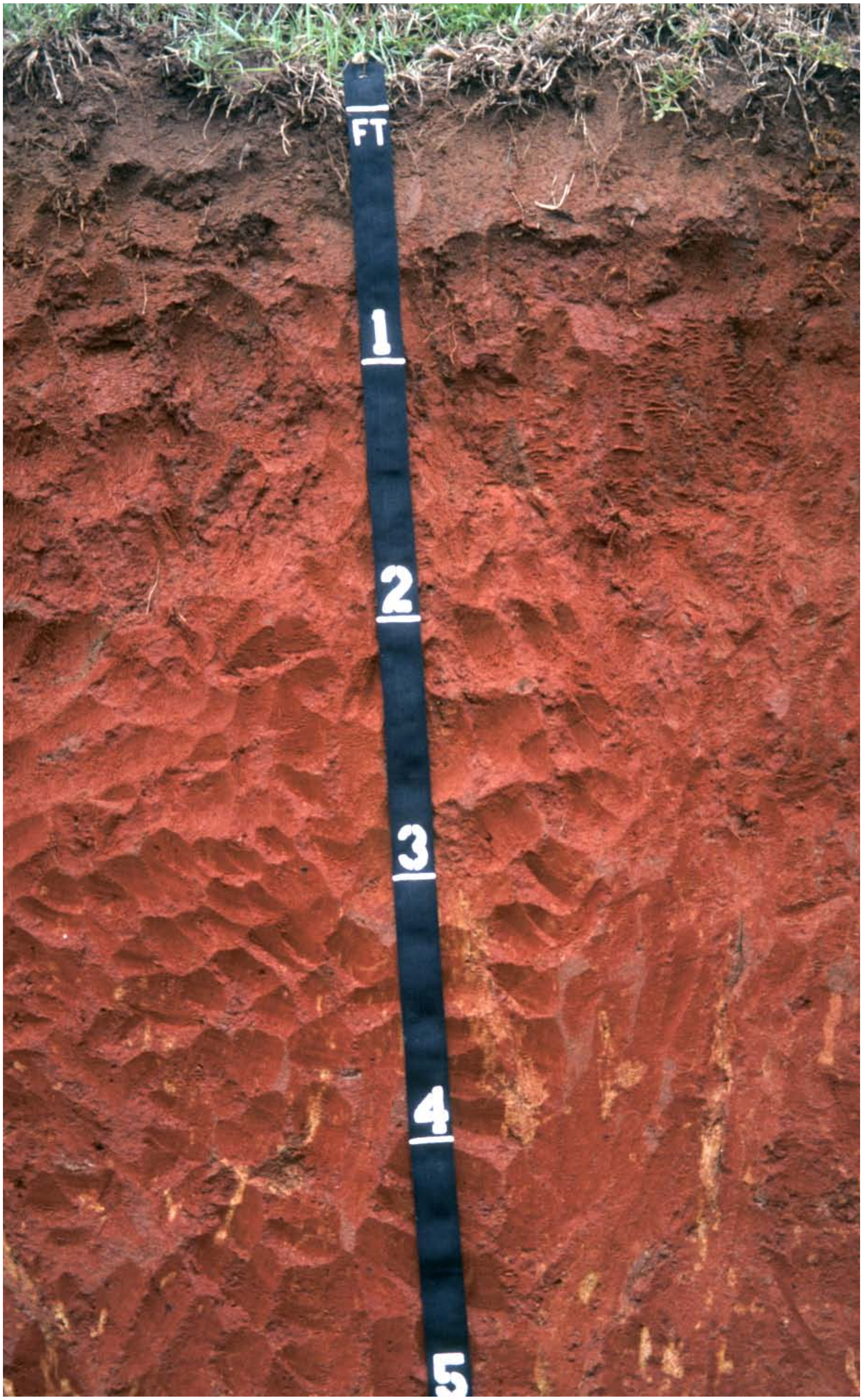


Figure 8.—Profile of Faceville sandy loam, 2 to 5 percent slopes. Faceville soils are well suited to most agronomic and forest crops.

Bt horizon:
Color—hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 4 to 8
Texture—clay loam, sandy clay, or clay

BC horizon (where present):
Color—hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 4 to 8; or multicolored in shades of red, brown, and yellow
Texture—sandy clay loam or sandy clay
Redoximorphic features (where present)—few or common iron accumulations in shades of red, brown, and yellow

Goldsboro Series

Landform: Broad interstream divides; stream terraces
Parent material: Loamy marine deposits (fig. 9)
Drainage class: Moderately well drained
Permeability class: Moderate
Depth class: Very deep
Slope: 0 to 2 percent
Taxonomic classification: Fine-loamy, siliceous, subactive, thermic Aquic Paleudults

Geographically Associated Soils

- Bibb and Kinston soils, which are on flood plains adjacent to the Goldsboro soils and are poorly drained
- Grady soils, which are in depressional positions and are poorly drained
- Iuka soils, which are in the lower positions on flood plains
- Ochlockonee soils, which are in the higher positions on flood plains
- Ocilla soils, which are in the lower positions, are somewhat poorly drained, and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Rains soils, which are in the lower positions and are poorly drained

Typical Pedon

Goldsboro loamy sand, 0 to 2 percent slopes; about 1.8 miles south of the Quitman and Clay County line on Georgia Highway 39 and 200 feet south of the highway; Clay County, Georgia; Hatcher, Georgia, USGS 7.5-minute quadrangle; lat. 31 degrees 45 minutes 30 seconds N. and long. 85 degrees 4 minutes 6 seconds W.

Ap—0 to 10 inches; brown (10YR 5/3) loamy sand; weak fine granular structure; very friable; clear smooth boundary.
Bt1—10 to 18 inches; light yellowish brown (10YR 6/4) sandy loam; weak fine subangular blocky structure; friable; clay bridges between sand grains and few faint clay films on all faces of peds; moderately acid; clear smooth boundary.
Bt2—18 to 33 inches; light yellowish brown (10YR 6/4) sandy clay loam; moderate medium subangular blocky structure; friable; clay bridges between sand grains and few faint clay films on all faces of peds; many medium distinct yellowish brown (10YR 5/8) masses of oxidized iron; common medium distinct light gray (10YR 7/2) iron depletions; strongly acid; clear smooth boundary.
Btg1—33 to 60 inches; light gray (10YR 7/2) sandy clay loam; moderate medium subangular blocky structure; friable; clay bridges between sand grains and few faint clay films on all faces of peds; common medium prominent red (2.5YR 4/8) and yellowish brown (10YR 5/8) masses of oxidized iron; common medium faint light gray (10YR 7/1) iron depletions; strongly acid; clear smooth boundary.
Btg2—60 to 80 inches; light gray (10YR 7/1) sandy clay loam; moderate medium subangular blocky structure; friable; clay bridges between sand grains and few

Figure 9.—Profile of Goldsboro loamy sand, 0 to 2 percent slopes. Note the redoximorphic features in the lower part.

faint clay films on all faces of peds; common medium prominent red (2.5YR 4/8) and yellowish brown (10YR 5/8) masses of oxidized iron; common medium faint light gray (10YR 7/2) iron depletions; strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 1 to 4
Texture—loamy sand or sandy loam

E horizon (where present):
Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 2 to 6
Texture—loamy sand or sandy loam

Bt horizon, upper part:
Color—hue of 10YR, value of 5 to 7, and chroma of 4 to 6
Texture—sandy loam or sandy clay loam

Bt horizon, lower part:
Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 3 to 6
Texture—sandy loam or sandy clay loam
Redoximorphic features—few or common iron depletions in shades of gray and masses of iron accumulation in shades of red, yellow, and brown

Btg horizon:
Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2
Texture—sandy loam or sandy clay loam
Redoximorphic features—common or many masses of iron accumulation in shades of red, yellow, and brown and iron depletions in shades of gray

Grady Series

Landform: Depressions
Parent material: Clayey marine deposits (fig. 10)
Drainage class: Poorly drained
Permeability class: Slow
Depth class: Very deep
Slope: 0 to 2 percent
Taxonomic classification: Fine, kaolinitic, thermic Typic Paleaquults

Geographically Associated Soils

- Goldsboro soils, which are in the higher positions and are moderately well drained
- Norfolk soils, which are in the higher positions and are well drained
- Ocilla soils, which are in higher positions, are moderately well drained, and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches

Typical Pedon

Grady clay loam, ponded; about 0.4 mile south of Five Points and 250 feet west of County Road 154; Randolph County, Georgia; Doverel, Georgia, USGS 7.5-minute quadrangle; lat. 31 degrees 41 minutes 42 seconds N. and long. 84 degrees 33 minutes 35 seconds W.

Ap—0 to 5 inches; very dark grayish brown (10YR 3/2) clay loam; moderate medium granular structure; friable; very strongly acid; clear smooth boundary.

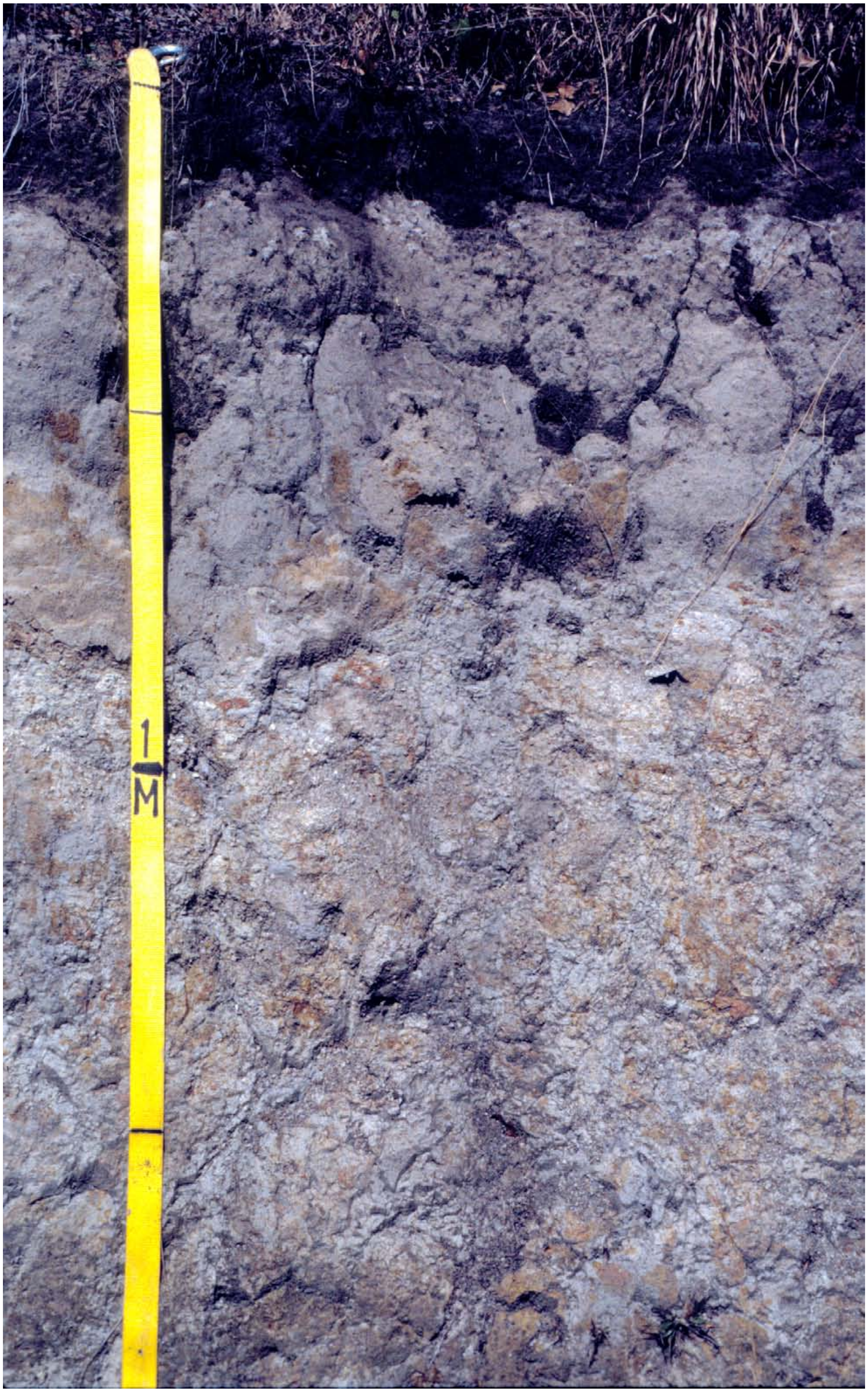


Figure 10.—Profile of Grady clay loam, ponded. Note the redoximorphic features throughout the profile.

Btg1—5 to 10 inches; gray (10YR 5/1) clay; moderate medium subangular blocky structure; very firm; common distinct clay films on all faces of peds; very strongly acid; gradual smooth boundary.
Btg2—10 to 30 inches; light brownish gray (10YR 6/2) clay; moderate medium subangular blocky structure; very firm; common distinct clay films on all faces of peds; very strongly acid; gradual smooth boundary.
Btg3—30 to 65 inches; light brownish gray (10YR 6/2) clay; moderate medium subangular blocky structure; very firm; common distinct clay films on all faces of peds; common medium distinct yellowish brown (10YR 5/8) and common medium prominent yellowish red (5YR 4/6) masses of oxidized iron; very strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches
Reaction: Extremely acid to strongly acid throughout, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 10YR, value of 2 or 3, and chroma of 1 or 2
Texture—loam or clay loam

Btg horizon:
Color—hue of 10YR to 5Y, value of 5 or 6, and chroma of 1 or 2
Texture—sandy clay or clay in the upper part and clay in the lower part
Redoximorphic features—few or common iron depletions in shades of gray and masses of iron accumulation in shades of yellow, brown, and red

Greenville Series

Landform: Broad interstream divides
Parent material: Clayey marine deposits
Drainage class: Well drained
Permeability class: Moderate
Depth class: Very deep
Slope: 0 to 15 percent
Taxonomic classification: Fine, kaolinitic, thermic Rhodic Kandiudults

Geographically Associated Soils

- Faceville soils, which are in positions similar to those of the Greenville soils and have color values that are higher by 4 or more
- Orangeburg soils, which are in positions similar to those of the Greenville soils or slightly lower, have color values that are higher by 4 or more, and have a fine-loamy control section
- Red Bay soils, which are in positions similar to those of the Greenville soils or slightly lower and have a fine-loamy control section

Typical Pedon

Greenville sandy clay loam, 0 to 2 percent slopes; about 0.5 mile east of Carter Creek on County Road 22, about 0.8 mile north on County Road 73, and 150 feet west; Randolph County, Georgia; Martins Crossroads, Georgia, USGS 7.5-minute quadrangle; lat. 31 degrees 39 minutes 16 seconds N. and long. 84 degrees 42 minutes 47 seconds W.

Ap—0 to 8 inches; dark reddish brown (5YR 3/3) sandy clay loam; weak medium granular structure; very friable; few fine roots; strongly acid; abrupt smooth boundary.

Bt1—8 to 45 inches; dark red (10R 3/6) sandy clay; moderate medium subangular blocky structure; firm; common fine roots; common distinct clay films on all faces of peds; strongly acid; gradual wavy boundary.

Bt2—45 to 80 inches; dark red (2.5YR 3/6) sandy clay; moderate medium subangular blocky structure; firm; few fine roots; common distinct clay films on all faces of peds; strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches

Reaction: Very strongly acid to moderately acid throughout, except where the surface layer has been limed

A or Ap horizon:

Color—hue of 2.5YR or 5YR, value of 3 or 4, and chroma of 2 to 6

Texture—sandy clay loam or sandy clay

Bt horizon:

Color—hue of 10R or 2.5YR, value of 2 or 3, and chroma of 2 to 6

Texture—clay loam, sandy clay, or clay

Iuka Series

Landform: Flood plains

Parent material: Stratified loamy alluvium and stratified sandy alluvium

Drainage class: Moderately well drained

Permeability class: Moderate

Depth class: Very deep

Slope: 0 to 5 percent

Taxonomic classification: Coarse-loamy, siliceous, active, acid, thermic Aquic Udifluvents

Geographically Associated Soils

- Bibb soils, which are in the lower positions on the flood plains and are poorly drained
- Goldsboro soils, which are on stream terraces and have a fine-loamy control section
- Kinston soils, which are in the lower positions on the flood plains, are poorly drained, and have a fine-loamy control section
- Ochlockonee soils, which are in the higher positions on the flood plains and are well drained
- Rains soils, which are in the slightly lower positions and have a fine-loamy control section

Typical Pedon

Iuka loamy sand in an area of Ochlockonee, Iuka, and Bibb soils, 0 to 5 percent slopes, frequently flooded; about 4.4 miles along Renfroe Road (County Road 46) from the intersection of Renfroe Road and State Road 520 and left along a dirt road 0.5 mile to a creek bottom; Stewart County, Georgia; Louvale, Georgia, USGS 7.5-minute quadrangle; lat. 32 degrees 11 minutes 32 seconds N. and long. 84 degrees 44 minutes 59 seconds W.

A—0 to 3 inches; dark grayish brown (10YR 4/2) loamy sand; weak medium granular structure; very friable; moderately acid; gradual wavy boundary.

C1—3 to 20 inches; brownish yellow (10YR 6/6), strong brown (7.5YR 5/6), and yellowish brown (10YR 5/4) stratified fine sand to fine sandy loam; single grain; very friable; very strongly acid; gradual wavy boundary.

C2—20 to 34 inches; light yellowish brown (10YR 6/4) and pale brown (10YR 6/3) fine sandy loam; massive; friable; common fine faint brownish yellow (10YR 6/6)

masses of iron accumulation; common fine distinct light brownish gray (10YR 6/2) iron depletions; very strongly acid; gradual wavy boundary.

Cg—34 to 80 inches; light gray (2.5Y 7/1) and gray (2.5Y 6/1) fine sandy loam; massive; friable; many medium prominent yellowish red (5YR 5/6), many medium prominent light yellowish brown (10YR 6/4), and common medium prominent reddish yellow (7.5YR 6/6) masses of iron accumulation; very strongly acid.

Range in Characteristics

Reaction: Strongly acid or very strongly acid, except where the surface layer has been limed

Other features: Few or common flakes of mica in some pedons

A or Ap horizon:

Color—hue of 7.5YR or 10YR, value of 4 to 7, and chroma of 2 to 4

Texture—loamy sand

C horizon:

Color—hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 6

Texture—dominantly sandy loam or fine sandy loam; thin gravelly or sandy strata in some pedons; sandy clay loam or clay loam below a depth of 40 inches in some pedons

Redoximorphic features—few or common iron depletions in shades of gray within a depth of 20 inches

Cg horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2

Texture—loamy sand, sandy loam, or fine sandy loam

Redoximorphic features—common or many masses of iron accumulation in shades of red, yellow, and brown and iron depletions in shades of gray

Kinston Series

Landform: Flood plains

Parent material: Stratified loamy and sandy alluvium

Drainage class: Poorly drained

Permeability class: Moderate

Depth class: Very deep

Slope: 0 to 1 percent

Taxonomic classification: Fine-loamy, siliceous, semiactive, acid, thermic Fluvaquentic Endoaquepts

Geographically Associated Soils

- Bibb soils, which are in positions similar to those of the Kinston soils and have a coarse-loamy control section
- Iuka soils, which are in the higher positions on the flood plains and are moderately well drained
- Ochlockonee soils, which are in the higher positions on the flood plains and are well drained
- Ocilla soils, which are in the higher positions and are moderately well drained
- Rains soils, which are in positions similar to those of the Kinston soils and have a fine loamy control section

Typical Pedon

Kinston loam in an area of Kinston and Bibb soils, 0 to 1 percent slopes, frequently flooded; about 3,800 feet west of the Randolph and Terrell County line on County Road 155 and 400 feet north in the flood plain along Ichawaynochaway Creek;

Randolph County, Georgia; Sanford, Georgia, USGS 7.5-minute quadrangle; lat. 31 degrees 54 minutes 5 seconds N. and long. 84 degrees 36 minutes 53 seconds W.

A1—0 to 3 inches; dark gray (10YR 4/1) loam; weak fine subangular blocky structure; friable; common fine, common medium, and common coarse roots; many faint yellowish red (5YR 5/6) masses of oxidized iron; strongly acid; clear wavy boundary.

A2—3 to 8 inches; very dark gray (10YR 3/1) silt loam; weak fine subangular blocky structure; friable; common medium, common fine, and common coarse roots; common faint yellowish red (5YR 5/6) masses of oxidized iron; strongly acid; clear wavy boundary.

Bg—8 to 15 inches; dark gray (2.5Y 4/1) clay loam; weak medium subangular blocky structure; firm; common medium, common coarse, and few fine roots; strongly acid; clear wavy boundary.

Ab—15 to 33 inches; very dark gray (10YR 3/1) sandy loam; massive; friable; common medium and common coarse roots; common medium distinct pale brown (10YR 6/3) masses of oxidized iron; common medium distinct light brownish gray (10YR 6/2) masses of reduced iron; very strongly acid; clear wavy boundary.

Cg1—33 to 52 inches; dark gray (10YR 4/1) sandy clay loam; massive; firm; few coarse roots; common fine and medium distinct dark yellowish brown (10YR 4/4) masses of oxidized iron; very strongly acid; gradual wavy boundary.

Cg2—52 to 80 inches; dark gray (10YR 4/1) loamy sand; massive; friable; very strongly acid.

Range in Characteristics

Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed

A or Ap horizon:

Color—hue of 10YR, value of 2 to 5, and chroma of 1 to 3; or neutral in hue and value of 5

Texture—loamy sand, sandy loam, fine sandy loam, silt loam, or loam

Redoximorphic features—few or common iron depletions in shades of gray and masses of iron accumulation in shades of brown, yellow, and red

Texture—loamy sand, sandy loam, fine sandy loam, silt loam, or loam

Ab horizon (where present):

Color—hue of 10YR, value of 3, and chroma of 1 or 2

Texture—sandy loam, fine sandy loam, loam, or sandy clay loam

Redoximorphic features (where present)—few or common features in shades of brown, yellow, and gray

Ag horizon (where present):

Color—hue of 10YR, value of 5, and chroma of 1; or neutral in hue and value of 5

Texture—loamy sand, sandy loam, fine sandy loam, silt loam, or loam

Bg horizon:

Color—hue of 10YR to 5Y, value of 3 to 7, and chroma of 1 or 2; hue of 5GY to 5BG, value of 6, and chroma of 1; or neutral in hue and value of 4 to 6

Texture—sandy loam, fine sandy loam, loam, sandy clay loam, and clay loam

Redoximorphic features (where present)—few or common masses of iron accumulation in shades of yellow, brown, and red

Cg or C'g horizon:

Color—hue of 10YR to 5Y, value of 3 to 7, and chroma of 1 or 2; hue of 5GY to 5BG, value of 6, and chroma of 1; or neutral in hue and value of 4 to 6

Texture—sandy loam, sandy clay loam, clay loam, or, below a depth of 40 inches, loamy sand or loamy fine sand

Redoximorphic features (where present)—few or common masses of iron accumulation in shades of yellow, brown, and red

Lucy Series

Landform: Broad interstream divides
Parent material: Sandy marine deposits and loamy marine deposits
Drainage class: Well drained
Permeability class: Moderate
Depth class: Very deep
Slope: 0 to 15 percent
Taxonomic classification: Loamy, kaolinitic, thermic Arenic Kandiudults

Geographically Associated Soils

- Benevolence and Orangeburg soils, which are in positions similar to those of the Lucy soils or slightly lower and do not have thick, sandy surface and subsurface layers
- Cowarts soils, which are in the slightly lower positions and do not have thick, sandy surface and subsurface layers
- Troup soils, which are in positions similar to those of the Lucy soils or slightly higher, are somewhat excessively drained, and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Typical Pedon

Lucy loamy sand, 0 to 5 percent slopes; about 1.5 miles west of Coleman on Georgia Highway 266 and 550 feet south of the highway; Randolph County, Georgia; Coleman, Georgia, USGS 7.5-minute quadrangle; lat. 31 degrees 40 minutes 8 seconds N. and long. 84 degrees 54 minutes 38 seconds W.

Ap—0 to 8 inches; grayish brown (10YR 5/2) loamy sand; weak fine granular structure; very friable; common fine and common medium roots; moderately acid; clear smooth boundary.
E—8 to 24 inches; brown (7.5YR 5/4) loamy sand; weak fine granular structure; very friable; common fine and common medium roots; moderately acid; gradual smooth boundary.
Bt1—24 to 48 inches; yellowish red (5YR 5/8) sandy loam; weak fine subangular blocky structure; very friable; common fine and common medium roots; strongly acid; gradual wavy boundary.
Bt2—48 to 72 inches; red (2.5YR 4/8) sandy clay loam; weak medium subangular blocky structure; friable; common fine and common medium roots; strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches
Thickness of sandy epipedon: 20 to 40 inches
Reaction: Very strongly acid to moderately acid in the A and E horizons and very strongly acid or strongly acid in the Bt horizon, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 4
Texture—loamy sand or loamy fine sand

E horizon:
Color—5YR to 10YR, value of 4 to 6, and chroma of 4 to 6
Texture—loamy sand or loamy fine sand

BE horizon (where present):
Color—hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 6 to 8
Texture—loamy sand, loamy fine sand, or sandy loam

Bt horizon:
Color—dominantly hue of 2.5YR or 5YR, value of 4 to 6, and chroma of 6 to 8; hue of 7.5YR or 10YR in the upper 10 inches of the horizon in some pedons
Texture—sandy loam, sandy clay loam, or, below a depth of 50 inches, sandy clay
Mottles (where present)—few or common in shades of brown, red, and yellow below a depth of 40 inches

Nankin Series

Landform: Interfluves and hillslopes
Parent material: Clayey marine deposits
Drainage class: Well drained
Permeability class: Moderately slow
Depth class: Very deep
Slope: 2 to 35 percent
Taxonomic classification: Fine, kaolinitic, thermic Typic Kanhapludults

Geographically Associated Soils

- Cowarts soils, which are in positions similar to those of the Nankin soils, have a solum that ranges from 20 to 40 inches in thickness, and have a fine-loamy control section
- Norfolk and Orangeburg soils, which are in the higher positions, have a solum that is more than 60 inches thick, and have a fine-loamy control section

Typical Pedon

Nankin loamy sand in an area of Nankin-Cowarts complex, 15 to 35 percent slopes; about 0.6 mile north of Sharon Church, 2,800 feet west of County Road 28, and 3,100 feet south of the Stewart County line; Randolph County, Georgia; Sanford, Georgia, USGS 7.5-minute quadrangle; lat. 31 degrees 54 minutes 57 seconds N. and long. 84 degrees 53 minutes 28 seconds W.

Ap—0 to 4 inches; very dark grayish brown (10YR 3/2) loamy sand; weak fine granular structure; very friable; strongly acid; abrupt smooth boundary.
BA—4 to 10 inches; dark yellowish brown (10YR 4/4) sandy loam; weak coarse subangular blocky structure; very friable; strongly acid; gradual wavy boundary.
Bt1—10 to 16 inches; yellowish brown (10YR 5/8) sandy clay loam; moderate coarse subangular blocky structure; friable; few faint clay films on all faces of peds; few medium distinct strong brown (7.5YR 5/8) masses of oxidized iron; strongly acid; gradual wavy boundary.
Bt2—16 to 34 inches; yellowish red (5YR 5/8) sandy clay; moderate medium subangular blocky structure; firm; strongly acid; gradual wavy boundary.
Bt3—34 to 39 inches; yellowish red (5YR 5/8) sandy clay; weak medium subangular blocky structure; friable; common distinct clay films on all faces of peds; common medium distinct red (2.5YR 5/8) and common fine distinct red (2.5YR 5/8) masses of oxidized iron; strongly acid; gradual wavy boundary.
BC—39 to 44 inches; strong brown (7.5YR 5/6) sandy clay loam; weak fine subangular blocky structure; friable; common medium distinct yellowish red (5YR 5/6) and common fine distinct yellowish red (5YR 5/6) masses of oxidized iron; very strongly acid; gradual wavy boundary.
C1—44 to 48 inches; yellowish brown (10YR 5/6) sandy loam; massive; very friable; common medium prominent red (2.5YR 5/8) masses of oxidized iron; very strongly acid; gradual wavy boundary.

C2—48 to 55 inches; yellowish brown (10YR 5/6) sandy loam; massive; very friable; common medium prominent red (2.5YR 5/8) masses of oxidized iron; very strongly acid; gradual wavy boundary.

C3—55 to 80 inches; yellowish brown (10YR 5/6) sandy loam; massive; friable; common medium prominent red (2.5YR 5/8) masses of oxidized iron; few medium distinct light brownish gray (10YR 6/2) masses of reduced iron; very strongly acid.

Range in Characteristics

Thickness of the solum: 40 to 60 inches

Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed

A or Ap horizon:

Color—hue of 10YR, value of 3 or 4, and chroma of 2 to 4

Texture—loamy sand or sandy loam

AB or BA horizon:

Color—hue of 5YR to 10YR, value of 4 or 5, and chroma of 2 to 4

Texture—sandy loam

Bt horizon, upper part:

Color—hue of 2.5YR to 10YR, value of 4 or 5, and chroma of 6 to 8; or hue of 10YR, value of 5 or 6, chroma of 4 to 8

Texture—sandy clay or clay loam; sandy clay loam in a thin Bt1 horizon in some pedons

Redoximorphic features—few or common masses of iron accumulation in shades of red, brown, and yellow

Bt horizon, lower part:

Color—hue of 2.5YR or 10YR, value of 4 or 5, and chroma of 6 to 8

Texture—sandy clay, clay loam, or clay

Redoximorphic features—few to many masses of iron accumulation in shades of red, brown, and yellow

BC horizon:

Color—hue of 2.5YR to 10YR, value of 4 or 5, and chroma of 6 to 8; or no dominant color and multicolored in shades of yellow, brown, red, and gray

Texture—sandy clay loam

Redoximorphic features—few to many iron depletions in shades of gray and masses of iron accumulation in shades of red and brown

C horizon:

Color—hue of 2.5YR to 10YR, value of 4 or 5, and chroma of 6; or no dominant color and multicolored in shades of yellow, brown, red, and gray

Texture—sandy loam or sandy clay loam

Redoximorphic features—few to many iron depletions in shades of gray and masses of iron accumulation in shades of red and brown

Norfolk Series

Landform: Interfluves

Parent material: Loamy marine deposits

Drainage class: Well drained

Permeability class: Moderate

Depth class: Very deep

Slope: 0 to 5 percent

Taxonomic classification: Fine-loamy, kaolinitic, thermic Typic Kandiudults

Geographically Associated Soils

- Bonneau soils, which are in positions similar to those of the Norfolk soils or slightly higher and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Faceville soils, which are in positions similar to those of the Norfolk soils or slightly higher and have a fine control section
- Goldsboro soils, which are in the lower positions and are moderately well drained
- Nankin soils, which are on the adjacent, higher slopes; have a fine control section; and have a solum that is less than 60 inches thick
- Ocilla soils, which are in the lower positions, have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches, and are somewhat poorly drained
- Orangeburg and Red Bay soils, which are in positions similar to those of the Norfolk soils or slightly higher and have redder hues
- Rains soils, which are in the lower positions and are poorly drained

Typical Pedon

Norfolk loamy sand, 0 to 2 percent slopes; about 1.2 miles south of Pataula Creek on Georgia Highway 39, west 0.4 mile along a field border, and 85 feet north of a ditch; Clay County, Georgia; Fort Gaines NE, Georgia, USGS 7.5-minute quadrangle; lat. 31 degrees 44 minutes 5 seconds N. and long. 85 degrees 3 minutes 7 seconds W.

Ap—0 to 6 inches; brown (10YR 4/3) loamy sand; weak fine granular structure; very friable; moderately acid; abrupt smooth boundary.

Bt1—6 to 10 inches; brownish yellow (10YR 6/8) sandy loam; weak medium subangular blocky structure; very friable; clay bridges between sand grains; strongly acid; clear smooth boundary.

Bt2—10 to 30 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; few distinct clay films on all faces of peds; strongly acid; gradual wavy boundary.

Bt3—30 to 55 inches; brownish yellow (10YR 6/8) sandy clay loam; moderate medium subangular blocky structure; friable; common distinct clay films on all faces of peds; strongly acid; gradual wavy boundary.

Bt4—55 to 70 inches; brownish yellow (10YR 6/8) sandy clay loam; weak medium subangular blocky structure; firm; few distinct clay films on all faces of peds; few medium distinct strong brown (7.5YR 4/6) and few medium prominent yellowish red (5YR 5/8) masses of oxidized iron; few fine prominent light brownish gray (10YR 6/2) masses of reduced iron; 1 percent plinthite nodules; strongly acid; gradual wavy boundary.

BC—70 to 80 inches; yellowish brown (10YR 5/8) sandy loam; weak fine granular structure; very friable; few medium distinct strong brown (7.5YR 5/8) and red (2.5YR 4/8) and few fine distinct brownish yellow (10YR 6/8) masses of oxidized iron; few medium prominent light brownish gray (10YR 6/2) masses of reduced iron; 3 percent plinthite nodules; strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches
Reaction: Extremely acid to strongly acid throughout, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 2 to 4
Texture—loamy sand or sandy loam

E horizon (where present):
Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 2 to 6
Texture—loamy sand or sandy loam

Bt horizon:
Color—hue of 7.5YR to 2.5Y, value of 5 to 8, and chroma of 3 to 8
Texture—sandy loam or sandy clay loam
Redoximorphic features (where present)—below a depth 48 inches; few, common, or many iron depletions in shades of gray and masses of iron accumulation in shades of red, brown, and yellow

BC horizon:
Color—hue of 5YR to 2.5Y, value of 4 to 7, and chroma of 2 to 8; or no dominant color and multicolored in shades of yellow, brown, red, and gray
Texture—sandy loam or sandy clay loam
Redoximorphic features—few to many iron depletions in shades of gray and masses of iron accumulation in shades of red, brown, and yellow

Ochlockonee Series

Landform: Flood plains
Parent material: Loamy alluvium
Drainage class: Well drained
Permeability class: Moderate
Depth class: Very deep
Slope: 0 to 5 percent
Taxonomic classification: Coarse-loamy, siliceous, active, acid, thermic Typic Udifluvents

Geographically Associated Soils

- Bibb soils, which are in the lower positions on the flood plains and are poorly drained
- Goldsboro soils, which are in positions similar to those of the Ochlockonee soils and are moderately well drained
- Iuka soils, which are in the slightly lower positions on the flood plains and are moderately well drained
- Rains soils, which are in the lower positions, are poorly drained, and have a fine-loamy control section

Typical Pedon

Ochlockonee loamy fine sand in an area of Ochlockonee, Iuka, and Bibb soils, 0 to 5 percent slopes, frequently flooded; about 0.8 mile along Renfroe Road (County Road 46) from the intersection of Renfroe Road and State Road 520 and 100 feet to the left of the road in a stream flood plain; Stewart County, Georgia; Brooklyn, Georgia, USGS 7.5-minute quadrangle; lat. 32 degrees 13 minutes 12 seconds N. and long. 84 degrees 44 minutes 19 seconds W.

A—0 to 4 inches; very dark grayish brown (10YR 3/2) loamy fine sand; weak medium granular structure; very friable; strongly acid; clear smooth boundary.
C1—4 to 32 inches; brownish yellow (10YR 6/6), light yellowish brown (10YR 6/4), and yellowish red (5YR 5/6) stratified sand to sandy loam; massive; friable; very strongly acid; gradual smooth boundary.
C2—32 to 62 inches; brownish yellow (10YR 6/6), light yellowish brown (10YR 6/4), very pale brown (10YR 7/4), and pale brown (10YR 6/3) fine sandy loam; massive; friable; very strongly acid; gradual smooth boundary.

C3—62 to 80 inches; light yellowish brown (2.5Y 6/3) and light gray (2.5Y 7/1) loamy sand; massive; very friable; common fine prominent brownish yellow (10YR 6/6) masses of oxidized iron; very strongly acid.

Range in Characteristics

Reaction: Very strongly acid to slightly acid in the A or Ap horizon and very strongly acid or strongly acid below the A horizon
Other features: Buried soil horizons below a depth of 25 inches in some pedons; few or common flakes of mica in some pedons

A or Ap horizon:
Color—7.5YR to 2.5Y, value of 3 to 6, and chroma of 2 to 4
Texture—loamy fine sand

C and C' horizon (where present):
Color—5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 8
Texture—sandy loam, fine sandy loam, loam, loamy sand, or loamy fine sand; thin strata of finer or coarser textured material in most pedons
Redoximorphic features—few or common masses of iron accumulation in shades of brown or yellow and iron depletions in shades of gray below a depth of 20 inches

Ocilla Series

Landform: Stream terraces
Parent material: Sandy marine deposits and loamy marine deposits
Drainage class: Somewhat poorly drained
Permeability class: Moderate
Depth class: Very deep
Slope: 0 to 2 percent
Taxonomic classification: Loamy, siliceous, semiactive, thermic Aquic Arenic Paleudults

Geographically Associated Soils

- Goldsboro soils, which are in the slightly higher positions and are moderately well drained
- Norfolk and Orangeburg soils, which are in the higher positions and are well drained
- Rains soils, which are in the lower positions and are poorly drained

Typical Pedon

Ocilla loamy sand, 0 to 2 percent slopes; in a cultivated field about 1.0 mile south of the Stewart County line on Georgia Highway 39 and 100 feet west of the road; Quitman County, Georgia; Georgetown, Georgia, USGS 7.5-minute quadrangle; lat. 31 degrees 58 minutes 20 seconds N. and long. 85 degrees 3 minutes 17 seconds W.

Ap—0 to 10 inches; grayish brown (10YR 5/2) loamy sand; weak medium granular structure; very friable; moderately acid; abrupt smooth boundary.
E—10 to 24 inches; light brownish gray (10YR 6/2) loamy sand; moderate medium granular structure; friable; strongly acid; gradual wavy boundary.
Bt—24 to 32 inches; yellowish brown (10YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; few faint clay films on faces of peds; few fine distinct strong brown (7.5YR 5/8) masses of oxidized iron; few fine distinct light brownish gray (10YR 6/2) iron depletions; strongly acid; gradual wavy boundary.
Btg1—32 to 40 inches; light brownish gray (10YR 6/2) sandy clay loam; weak medium subangular blocky structure; friable; few faint clay films on faces of peds; common

medium distinct strong brown (7.5YR 5/8) and common medium prominent yellowish red (5YR 5/8) masses of oxidized iron; strongly acid; gradual wavy boundary.

Btg2—40 to 58 inches; light brownish gray (10YR 6/2) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; many coarse distinct strong brown (7.5YR 5/8) and many coarse prominent red (2.5YR 5/8) masses of oxidized iron; strongly acid; gradual wavy boundary.

Btg3—58 to 72 inches; light brownish gray (10YR 6/2) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay films between sand grains; many coarse distinct brownish yellow (10YR 6/6) masses of oxidized iron; strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 1 or 2
Texture—loamy sand or loamy fine sand

E horizon:
Color—hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 to 4
Texture—loamy sand or loamy fine sand
Redoximorphic features (where present)—few or common masses of iron accumulation in shades of brown or yellow or iron depletions in shades of gray

Bt horizon, upper part:
Color—hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 3 to 8
Texture—sandy loam or sandy clay loam
Redoximorphic features—no, few, common, or many masses of iron accumulation in shades of brown, red, or yellow and few to many iron depletions in shades of gray

Bt horizon, lower part, and BC horizon (where present):
Color—hue of 10YR to 5Y, value of 5 to 8, and chroma of 3 to 8; or multicolored in shades of brown, yellow, red, and gray
Texture—sandy clay loam or sandy clay
Redoximorphic features—few to many masses of iron accumulation in shades of brown, yellow, and red and few to many iron depletions in shades of gray

Btg horizon and BCg horizon (where present):
Color—hue of 10YR to 5Y, value of 5 to 8, and chroma of 1 or 2; or neutral in hue and value of 7
Texture—sandy clay loam or sandy clay
Redoximorphic features—few to many masses of iron accumulation in shades of brown, yellow, and red and few to many iron depletions in shades of gray

Orangeburg Series

Landform: Broad interstream divides
Parent material: Loamy marine deposits (fig. 11)
Drainage class: Well drained
Permeability class: Moderate
Depth class: Very deep
Slope: 0 to 15 percent
Taxonomic classification: Fine-loamy, kaolinitic, thermic Typic Kandiudults

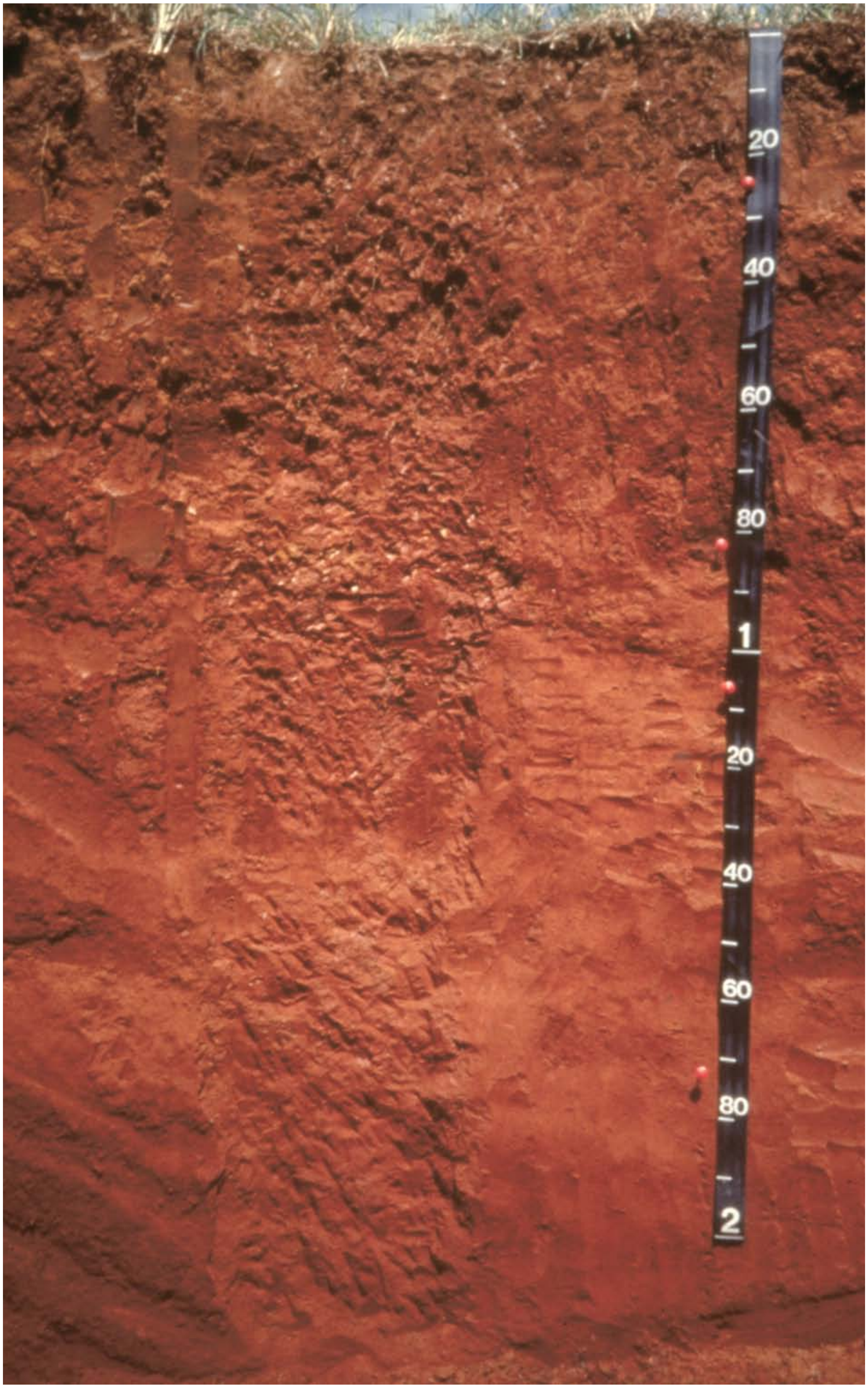


Figure 11.—Profile of Orangeburg loamy sand, 2 to 5 percent slopes. Orangeburg soils are characterized by a red subsoil.

Geographically Associated Soils

- Benevolence soils, which are in positions similar to those of the Orangeburg soils and have a coarse-loamy control section
- Bonneau and Lucy soils, which are in positions similar to those of the Orangeburg soils and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Cowarts Soils, which are on the lower slopes adjacent to the Orangeburg soils and have a solum that is 20 to 40 inches thick
- Faceville soils, which are in positions similar to those of the Orangeburg soils or slightly higher and have a fine control section
- Grady soils, which are in the lower depressional positions, are poorly drained, and have a fine control section
- Greenville soils, which are in positions similar to those of the Orangeburg soils or slightly higher, have a fine control section, and are dark red
- Nankin soils, which are on the lower slopes adjacent to the Orangeburg soils and have a fine control section
- Norfolk soils, which are in positions similar to those of the Orangeburg soils or slightly lower and have yellower hues
- Ocilla soils, which are in the lower positions, have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches, and are somewhat poorly drained
- Red Bay soils, which are in positions similar to those of the Orangeburg soils or slightly higher and are dark red
- Troup soils, which are in the slightly higher positions, are somewhat excessively drained, and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Typical Pedon

Orangeburg loamy sand, 0 to 2 percent slopes; about 0.3 mile southeast of the Clay and Quitman County line on County Road 61 and 400 feet north of highway; Clay County, Georgia; Hatcher, Georgia, USGS 7.5-minute quadrangle; lat. 31 degrees 46 minutes 10 seconds N. and long. 85 degrees 3 minutes 11 seconds W.

Ap—0 to 7 inches; dark brown (10YR 3/3) loamy sand; weak fine granular structure; very friable; slightly acid; abrupt smooth boundary.

BA—7 to 12 inches; yellowish red (5YR 4/6) sandy loam; weak fine subangular blocky structure; friable; clay bridges between sand grains; slightly acid; clear smooth boundary.

Bt1—12 to 22 inches; red (2.5YR 4/8) sandy clay loam; moderate medium subangular blocky structure; friable; common distinct clay films on all faces of peds; strongly acid; gradual wavy boundary.

Bt2—22 to 80 inches; red (2.5YR 4/8) sandy clay loam; weak medium subangular blocky structure; friable; common distinct clay films on all faces of peds; strongly acid.

Range in Characteristics

Thickness of the solum: More than 70 inches

Reaction: Very strongly acid to moderately acid in the upper part of the solum and very strongly acid or strongly acid in the lower part, except where the surface layer has been limed

A or Ap horizon:

Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 4

Texture—loamy sand or sandy loam

E horizon (where present):
Color—hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 3 or 4
Texture—loamy sand

BA horizon:
Color—hue of 2.5YR to 7.5YR, value of 4 or 5, and chroma of 4 to 6
Texture—sandy loam

Bt horizon:
Color—hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8
Texture—dominantly sandy clay loam; sandy clay in lower part of the horizon in some pedons
Mottles—few or common in shades of brown in the lower part of the horizon

Rains Series

Landform: Stream terraces and depressions
Parent material: Loamy alluvium and loamy marine deposits
Drainage class: Poorly drained
Permeability class: Moderate
Depth class: Very deep
Slope: 0 to 2 percent
Taxonomic classification: Fine-loamy, siliceous, semiactive, thermic Typic Paleaquults

Geographically Associated Soils

- Bibb and Kinston soils, which are in the lower positions
- Iuka soils, which are in the higher positions on flood plains and are moderately well drained
- Norfolk soils, which are in the higher positions and are well drained
- Ochlocknee soils, which are in the higher positions on flood plains and are well drained

Typical Pedon

Rains sandy loam, 0 to 2 percent slopes, occasionally flooded; about 1.2 miles north of the bridge over the Pataula Creek on Georgia Highway 39 and 120 feet southwest of the road; Clay County, Georgia; Hatcher, Georgia, USGS 7.5-minute quadrangle; lat. 31 degrees 45 minutes 22 seconds N. and long. 85 degrees 4 minutes 1 second W.

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) sandy loam; weak fine granular structure; very friable; moderately acid; abrupt smooth boundary.
Btg1—8 to 26 inches; gray (10YR 6/1) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay films on all faces of peds; moderately acid; clear wavy boundary.
Btg2—26 to 38 inches; gray (10YR 6/1) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay films on all faces of peds; common medium distinct strong brown (7.5YR 5/8) and few fine prominent yellowish red (5YR 5/6) masses of oxidized iron; strongly acid; gradual wavy boundary.
Btg3—38 to 48 inches; gray (10YR 6/1) sandy clay loam; moderate medium subangular blocky structure; firm; few faint clay films on all faces of peds; common medium distinct yellowish red (5YR 5/6) and common medium distinct strong brown (7.5YR 5/8) masses of oxidized iron; strongly acid; gradual wavy boundary.
Btg4—48 to 52 inches; gray (10YR 6/1) sandy clay loam; moderate medium subangular blocky structure; firm; few faint clay films on all faces of peds; many coarse distinct strong brown (7.5YR 5/8) and many coarse prominent yellowish red (5YR 5/6) masses of oxidized iron; strongly acid; gradual wavy boundary.

Btg5—52 to 72 inches; gray (10YR 6/1) sandy clay loam; moderate medium subangular blocky structure; firm; strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches
Reaction: Extremely acid to strongly acid, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 10YR or 2.5Y, value of 2 to 5, and chroma of 1 or 2; or neutral in hue and value of 2 to 5
Texture—sandy loam or loamy sand

Eg horizon (where present):
Color—hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2; or neutral in hue and value of 4 to 7
Texture—sandy loam or loamy sand
Redoximorphic features (where present)—few or common masses of iron accumulation in shades of brown or yellow and iron depletions in shades of gray

Btg horizon, upper part:
Color—hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2; or neutral in hue and value of 4 to 7
Texture—sandy loam, sandy clay loam, or clay loam
Redoximorphic features (where present)—few, common, or many masses of iron accumulation in shades of brown, red, or yellow and iron depletions in shades of gray

Btg horizon, lower part:
Color—hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2; or neutral in hue and value of 4 to 7
Texture—sandy clay loam, clay loam, or sandy clay
Redoximorphic features (where present)—few, common, or many masses of iron accumulation in shades of brown, red, or yellow and iron depletions in shades of gray

Red Bay Series

Landform: Broad interstream divides
Parent material: Loamy marine deposits
Drainage class: Well drained
Permeability class: Moderate
Depth class: Very deep
Slope: 0 to 15 percent
Taxonomic classification: Fine-loamy, kaolinitic, thermic Rhodic Kandiudults

Geographically Associated Soils

- Benevolence soils, which are in positions similar to those of the Red Bay soils or slightly lower, have color values that are higher by 4 or more, and have a coarse-loamy control section
- Faceville soils, which are in positions similar to those of the Red Bay soils, have color values that are higher by 4 or more, and have a fine control section
- Greenville soils, which are in positions similar to those of the Red Bay soils or slightly higher and have a fine control section
- Norfolk soils, which are in the slightly lower positions and have yellower hues
- Orangeburg soils, which are in positions similar to those of the Red Bay soils or slightly lower and have color values that are higher by 4 or more

Typical Pedon

Red Bay loamy sand, 2 to 5 percent slopes; about 0.3 mile east of the intersection of Benevolence Road and County Road 105 and 200 feet south of the county road; Randolph County, Georgia; Benevolence, Georgia, USGS 7.5-minute quadrangle; lat. 31 degrees 51 minutes 4 seconds N. and long. 84 degrees 44 minutes 49 seconds W.

Ap—0 to 8 inches; dark reddish brown (2.5YR 3/3) loamy sand; weak fine granular structure; very friable; slightly acid; clear smooth boundary.
Bt1—8 to 40 inches; dark red (2.5YR 3/6) sandy loam; weak medium subangular blocky structure; friable; many distinct clay bridges between sand grains and very many distinct sand coats; moderately acid; gradual smooth boundary.
Bt2—40 to 80 inches; dark red (10R 3/6) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay films on all faces of peds; strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches
Reaction: Very strongly acid to moderately acid in the upper part of the solum and very strongly acid or strongly acid in the lower part, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 2.5YR or 5YR, value of 3 or 4, and chroma of 2 to 4
Texture—loamy sand or sandy loam

BA horizon (where present):
Color—hue of 10R to 5YR, value of 3 or 4, and chroma of 4 to 6
Texture—sandy loam or sandy clay loam

Bt horizon:
Color—hue of 10R or 2.5YR, value of 3, and chroma of 4 to 6
Texture—sandy loam or sandy clay loam

Sunsweet Series

Landform: Hillslopes
Parent material: Clayey marine deposits
Drainage class: Well drained
Permeability class: Moderately slow
Depth class: Very deep
*Slope:*2 to 12 percent
Taxonomic classification: Fine, kaolinitic, thermic Plinthic Paleudults

Geographically Associated Soils

- Cowarts soils, which are in positions similar to those of the Sunsweet soils and have less than 35 percent clay in the control section
- Faceville soils, which are in positions similar to those of the Sunsweet soils, do not contain plinthite, and are redder
- Orangeburg soils, which are in positions similar to those of the Sunsweet soils, do not contain plinthite, and have less than 35 percent clay in the control section
- Tifton soils, which are in positions similar to those of the Sunsweet soils, have 18 to 35 percent clay in the control section, and have plinthite at a depth of more than 15 inches

Typical Pedon

Sunsweet sandy loam, 2 to 8 percent slopes, eroded; 4 miles north on Georgia Highway 55 from Dawson, 1.25 miles southwest of Yoemans on Scrap Israel Road, 0.25 mile north on Fillingame Pond Road, on the west side of the road; Terrell County, Georgia; Dawson, Georgia, USGS 7.5-minute quadrangle; lat. 31 degrees 50 minutes 20 seconds N. and long. 84 degrees 26 minutes 52 seconds W.

Apc—0 to 4 inches; brown (7.5YR 4/4) gravelly sandy loam; weak fine granular structure; very friable; thin patchy clay films on faces of peds; 20 percent ironstone nodules; very strongly acid; clear smooth boundary.

Btc—4 to 15 inches; red (2.5YR 5/6) sandy clay; moderate medium subangular blocky structure; friable; common distinct clay films on faces of peds; 3 percent plinthite nodules; 12 percent ironstone nodules; very strongly acid; clear smooth boundary.

Btcv1—15 to 20 inches; red (2.5YR 5/6) sandy clay; moderate medium subangular blocky structure; friable; common distinct clay films on faces of peds; 5 percent plinthite nodules; 15 percent ironstone nodules; very strongly acid; clear smooth boundary.

Btcv2—20 to 35 inches; red (2.5YR 5/6) sandy clay; moderate medium subangular blocky structure; firm; common medium faint red (2.5YR 4/6) and common medium distinct dark red (2.5YR 3/6) masses of oxidized iron; many medium prominent yellowish brown (10YR 5/6) iron depletions; common distinct clay films on faces of peds; 15 percent plinthite nodules; 12 percent ironstone nodules; very strongly acid; gradual wavy boundary.

Btv—35 to 60 inches; sandy clay, variegated red (2.5YR 4/6), dark red (2.5YR 3/6), yellowish brown (10YR 5/6), light gray (10YR 7/1), very pale brown (10YR 7/3), and yellowish red (5YR 5/6); moderate medium subangular blocky structure; firm; common distinct clay films on faces of peds; 35 percent plinthite nodules; very strongly acid.

Range in Characteristics

Thickness of the solum: 60 to more than 120 inches

Reaction: Very strongly acid or strongly acid, except where the A horizon has been limed

Plinthite: 5 percent or more at a depth of 5 to 15 inches

Other features: 5 to 35 percent ironstone nodules in the A, Btc, and Btcv horizons and 0 to 15 percent in the Btv horizon

A or Ap horizon:

Color—hue of 2.5Y, 10YR, 7.5YR, or 5YR; value of 3, 4, or 5; and chroma of 2, 3, 4, 6, or 8

Texture—sandy loam, loamy sand, or their gravelly analogs

Btc horizon:

Color—hue of 10YR, 7.5YR, 5YR, or 2.5YR; value of 4, 5, or 6; and chroma of 6 or 8

Texture—sandy clay loam, sandy clay, clay or their gravelly analogs

Btvc horizon:

Color—hue of 10R, 7.5YR, 5YR, or 2.5YR; value of 4, 5, or 6; and chroma of 6 or 8

Texture—sandy clay loam, sandy clay, clay, or their gravelly analogs

Redoximorphic features—few to many masses of iron accumulation in shades of brown, red, or yellow and iron depletions in shades of gray

Btv horizon:

Color—hue of 10R, 7.5YR, 5YR, or 2.5YR; value of 4, 5, or 6; and chroma of 6 or 8; commonly variegated

Texture—sandy clay loam, sandy clay, or clay
Redoximorphic features—few to many masses of iron accumulation in shades of brown, red, or yellow and iron depletions in shades of gray

Tifton Series

Landform: Broad interstream divides
Parent material: Loamy marine deposits (fig. 12)
Drainage class: Well drained
Permeability class: Moderately slow
Depth class: Very deep
Slope: 0 to 8 percent
Taxonomic classification: Fine-loamy, kaolinitic, thermic Plinthic Kandiudults

Geographically Associated Soils

- Faceville soils, which are in positions similar to those of the Tifton soils or slightly higher, have less than 5 percent ironstone nodules and less than 5 percent plinthite in all horizons, and have a clayey control section
- Norfolk soils, which are in positions similar to those of the Tifton soils or slightly lower and have less than 5 percent ironstone nodules and less than 5 percent plinthite in all horizons
- Orangeburg soils, which are in positions similar to those of the Tifton soils or slightly higher, are redder, and have less than 5 percent plinthite in all horizons
- Sunsweet soils, which have more than 35 percent clay in the upper 20 inches of the Bt horizon

Typical Pedon

Tifton sandy loam, 2 to 5 percent slopes; 1.1 miles east on Georgia Highway 32 from Chickasawhatchee Creek, 1.2 miles northeast on Morris Fleming Road, on the north side of the road in a cultivated field; Terrell County, Georgia; Dawson, Georgia, USGS 7.5-minute quadrangle; lat. 31 degrees 46 minutes 45 seconds N. and long. 84 degrees 23 minutes 2 seconds W.

Apc—0 to 5 inches; brown (10YR 4/3) sandy loam; weak fine granular structure; very friable; common fine roots; 12 percent ironstone nodules; strongly acid; clear smooth boundary.

Btc1—5 to 9 inches; brown (7.5YR 5/4) sandy loam; weak medium subangular blocky structure; friable; sand grains coated and bridged with clay; common fine roots; common medium and fine pores; 8 percent ironstone nodules; strongly acid; clear smooth boundary.

Btc2—9 to 32 inches; strong brown (7.5YR 5/6) sandy loam; moderate medium subangular blocky structure; friable; few faint clay films in root pores, on ironstone nodules, and on ped faces; few fine roots; many fine pores; 8 percent ironstone nodules; strongly acid; gradual wavy boundary.

Btv1—32 to 42 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; firm; common medium prominent red (2.5YR 4/6) masses of oxidized iron; common distinct clay films on some ped faces, root pores, and ironstone nodules; few fine roots; few fine pores; 8 percent plinthite nodules; 5 percent ironstone nodules; strongly acid; gradual wavy boundary.

Btv2—42 to 80 inches; sandy clay loam with streaks of clay, variegated yellowish brown (10YR 5/6), red (2.5YR 4/6), strong brown (7.5YR 5/6), and light gray (10YR 7/1); strong medium and coarse angular blocky structure; firm; common distinct clay films on ped faces, pores, and ironstone nodules; few fine roots; few fine pores; 30 percent plinthite nodules; 2 percent ironstone nodules; strongly acid.

Figure 12.—Profile of a Tifton soil. Note the redoximorphic features starting at a depth of about 4 feet.

Range in Characteristics

Thickness of the solum: 60 inches or more
Reaction: Strongly acid or very strongly acid, except where the A horizon has been limed
Plinthite: 5 percent or more at a depth of 30 to 50 inches
Other features: 5 to 25 percent ironstone nodules in the A, Btc, and Btcv horizons and 0 to 13 percent in the Btv1 horizon

Ac or Apc horizon:
Color—hue of 2.5Y or 10YR, value of 3 to 5, and chroma of 1 to 4
Texture—sand, fine sand, loamy fine sand, loamy sand, loamy coarse sand, sandy loam, fine sandy loam, or their gravelly analogs

Btc horizon:
Color—hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 4 to 8
Texture—fine sandy loam, sandy loam, sandy clay loam, or their gravelly analogs
Redoximorphic features—few to many masses of iron accumulation in shades of brown, red, or yellow and iron depletions in shades of gray

Btv horizon, upper part:
Color—hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 4 to 8
Texture—dominantly sandy clay loam; sandy clay in some pedons
Redoximorphic features—few to many masses of iron accumulation in shades of brown, red, or yellow and iron depletions in shades of gray

Btv horizon, lower part:
Color—hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 5 to 8; commonly variegated
Texture—dominantly sandy clay loam; sandy clay in some pedons
Redoximorphic features—few to many masses of iron accumulation in shades of brown, red, or yellow and iron depletions in shades of gray

Troup Series

Landform: Broad interstream divides and hillslopes
Parent material: Loamy marine deposits and sandy marine deposits (fig. 13)
Drainage class: Somewhat excessively drained
Permeability class: Moderate
Depth class: Very deep
Slope: 0 to 15 percent
Taxonomic classification: Loamy, kaolinitic, thermic Grossarenic Kandiudults

Geographically Associated Soils

- Benevolence soils, which are in the slightly lower positions, are well drained, and do not have thick, sandy surface and subsurface layers
- Bonneau soils, which are in the slightly lower positions, are well drained, and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Cowarts soils, which are in the lower positions, are well drained, and do not have thick, sandy surface and subsurface layers
- Lucy soils, which are in positions similar to those of the Troup soils or slightly lower, are well drained, and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Orangeburg soils, which are in positions similar to those of the Troup soils or slightly lower, are well drained, and do not have thick, sandy surface and subsurface layers

Typical Pedon

Troup loamy sand, 0 to 5 percent slopes; about 0.5 mile north of Ichawaynochaway Creek on Georgia Highway 41 and 500 feet west in a field; Randolph County, Georgia; Benevolence, Georgia, USGS 7.5-minute quadrangle; lat. 31 degrees 53 minutes 55 seconds N. and long. 84 degrees 38 minutes 32 seconds W.

Ap—0 to 9 inches; brown (7.5YR 4/3) loamy sand; weak fine granular structure; very friable; slightly acid; clear smooth boundary.

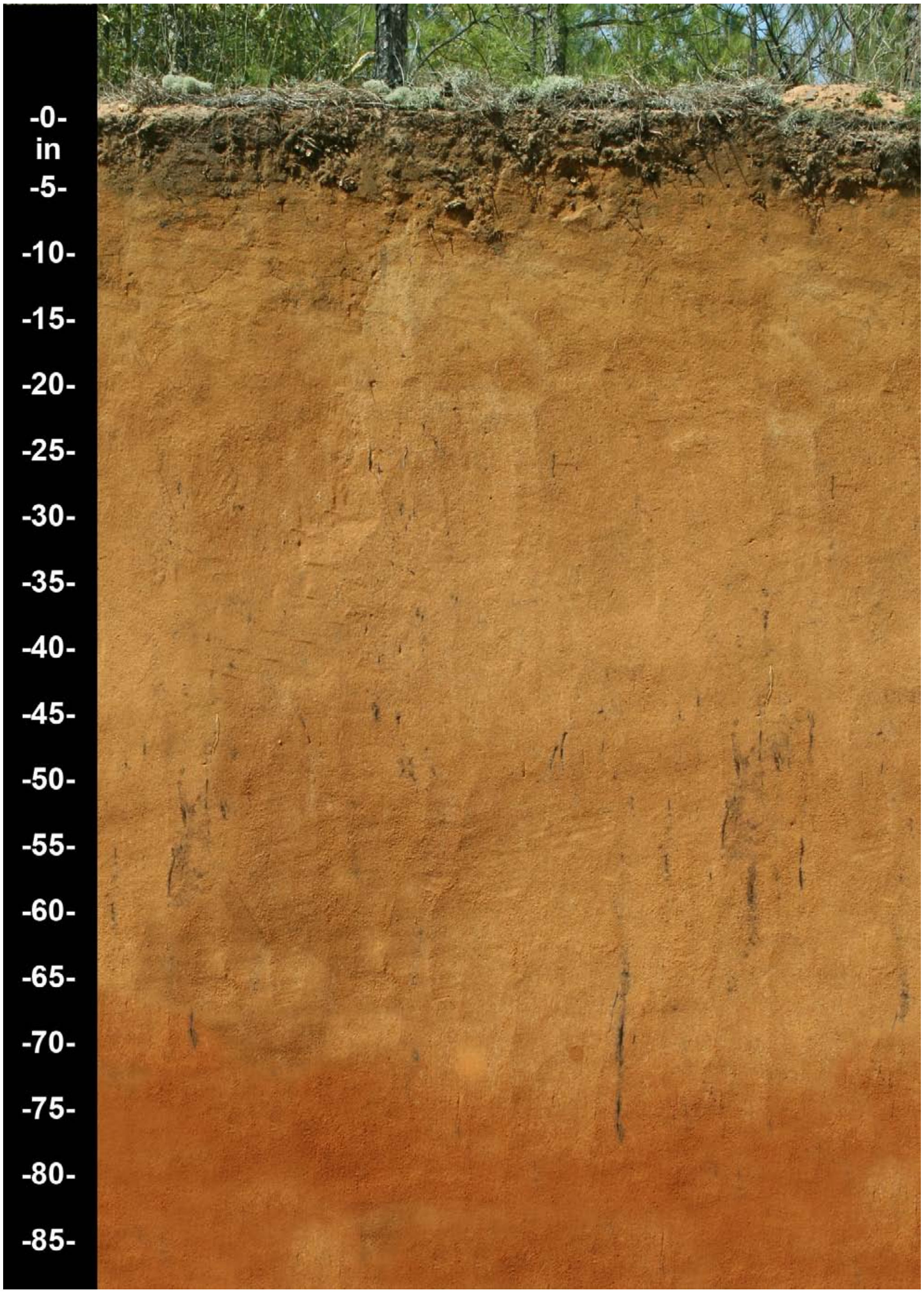


Figure 13.—Profile of a Troup soil. Troup soils are characterized by sandy surface and subsurface layers with a combined thickness of 40 to 80 inches.

E1—9 to 50 inches; strong brown (7.5YR 5/6) loamy sand; weak fine granular structure; very friable; moderately acid; gradual smooth boundary.
E2—50 to 60 inches; yellowish red (5YR 5/6) loamy sand; weak fine granular structure; very friable; strongly acid; gradual smooth boundary.

Bt—60 to 80 inches; red (2.5YR 4/8) sandy loam; weak medium subangular blocky structure; friable; very strongly acid.

Range in Characteristics

Thickness of the solum: More than 80 inches
Thickness of sandy epipedon: 40 to 80 inches
Reaction: Very strongly acid to moderately acid in the A and E horizons and extremely acid in the Bt and C horizons, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 7.5YR or 10YR, value of 3 to 6, and chroma of 2 to 4
Texture—sand or loamy sand

E horizon:
Color—hue of 5YR to 10YR, value of 5 to 7, and chroma of 4 to 8
Texture—sand or loamy sand

Bt horizon:
Color—hue of 10R to 5YR, value of 4 to 7, and chroma of 4 to 8
Texture—sandy loam or sandy clay loam

Formation of the Soils

Soil characteristics are determined by the physical and mineral composition of the parent material; the climate under which the parent material accumulated and has existed since accumulation; the plant and animal life on and in the soil; the relief, or lay of the land; and the length of time that the forces of soil formation have acted on the soil material (Jenny, 1941). All of these factors influence every soil, but the significance of each factor varies from place to place. In one area, one factor may dominate soil formation; in another area, a different factor may be the most important. The interrelationships among these five factors are complex, and the effects of any one factor cannot be isolated and completely evaluated. It is convenient, however, to discuss each factor separately and to indicate the probable effects of each.

Parent Material

Parent material is the unconsolidated mass in which soil forms. The chemical and mineralogical composition of the soil is largely derived from the parent material. Webster County is underlain by Coastal Plain sedimentary rock (GDNR, 1976). Sandy to clayey marine sediment overlie the rock.

The Providence and Ripley Formations make up the parent material for the upland soils in the northwestern part of Webster County. The dominant soils that formed in materials derived from these formations are characterized by brownish, sandy surface and subsurface layers and a brownish or reddish subsoil.

The Nanafalia and Clayton Formations underlie the majority of the central portion of Webster County. The dominant soils that formed in materials derived from these formations are characterized by brownish, sandy surface and subsurface layers and a brownish or reddish subsoil of sandy clay loam.

The Claiborne Group, Tuscahoma Formation, and Altamaha Formation underlie the majority of the southern portion of Webster County. The dominant soils that formed in materials derived from these formations are characterized by brownish, sandy surface and subsurface layers and a brownish or reddish subsoil of sandy clay loam or clay loam.

Stream alluvium is adjacent to all the streams in the survey area. It is most extensive on the flood plain along Kinchafoonee Creek. Soils that formed in alluvium formed in more recent sediments than soils that formed on uplands. Kinston and Bibb soils formed in sandy and loamy alluvium along Kinchafoonee Creek and other large creeks.

Climate

The present climate of Webster County is probably similar to the climate that existed as the soils formed. The relatively high rainfall and warm temperatures contribute to rapid soil formation. They are the most important climatic features related to soil properties.

Water from precipitation is essential in the formation of soil. Water dissolves soluble materials and is used by plants and animals. It transports material from one part of the soil to another part or from one area to another area.

Soils in Webster County formed under a thermic temperature regime; that is, the mean soil temperature at a depth of 20 inches is 59 to 72 degrees Fahrenheit. The rate of chemical reactions and other processes in the soil depends to some extent on temperature. In addition, temperature affects the type and quantity of vegetation, the amount and kind of organic matter, and the rate of decomposition of organic matter.

Plants and Animals

The role of plants, animals, and other organisms is significant in soil formation. Plants and animals increase the amount of organic matter and nitrogen, increase or decrease the content of plant nutrients, and change soil structure and porosity. Plants recycle nutrients, accumulate organic matter, and provide food and cover for animals. Plants stabilize the surface layer so that soil-forming processes can continue. Vegetation also provides a more stable environment for soil-forming processes by protecting the soils from extremes in temperature.

The soils in Webster County formed under a succession of briars, brambles, and woody plants that yielded to pines and hardwood trees. Later, the hardwoods suppressed most other plants and became the climax vegetation.

Animals rearrange soil material by roughening the surface, forming and filling channels, and shaping the peds and voids. The soil is mixed by ants, wasps, worms, and spiders that make channels; by crustacea, such as crabs and crayfish; and by turtles and foxes that dig burrows. Humans affect the soil-forming process by tilling crops, removing natural vegetation, establishing different plants, and reducing or increasing soil fertility. Bacteria, fungi, and other microorganisms increase the rate of decomposition of organic matter and increase the release of minerals for plant growth.

The net gains and losses caused by plants and animals in the soil-forming process are important in the survey area. However, the relationship between plants and animals, climate, and parent materials is very close; therefore, the soils do not differ significantly because of the role of plants and animals.

Relief

Relief is the elevations, or inequalities, of land surface considered collectively. Color and wetness of the soil, thickness of the surface horizon, content of organic matter, and plant cover are commonly related to relief. In Webster County, the most obvious effects of relief are variations in the color of the soil and the degree of soil wetness. For example, Faceville and Orangeburg soils primarily have a yellowish red subsoil and Grady and Rains soils are primarily gray throughout the subsoil. These color differences result from differences in relief and corresponding differences in internal drainage. The Faceville and Orangeburg soils, which are in higher areas, are better drained than the Grady and Rains soils. The Faceville and Orangeburg soils, therefore, are better oxidized and have a redder subsoil than the Grady and Rains soils.

The movement of water across the surface and through the soil is controlled to a large extent by relief. Water flowing over the soil commonly carries solid particles and results in either erosion or deposition, depending on the relief. More water runs off sloping areas and less water enters the soil, so the soils are drier in the steeper areas. Lower areas receive the water that flows off and through the higher soils. The lower areas, therefore, are commonly wetter than the higher areas.

Time

The length of time that soil-forming factors act on the parent material determines to a large degree the characteristics of the soil. Most of the soils in the survey area are considered mature. A mature soil is in equilibrium with the environment. It has readily

recognized pedogenic horizons and a regular decrease in content of carbon with increasing depth.

Some areas of Faceville and Orangeburg soils are on broad, stable landscapes where the soil-forming processes have been active for thousands of years. These mature soils have a thick solum and a well expressed zone of illuviation.

Kinston and Bibb soils receive sediment annually from flood water. These young soils are stratified and are not old enough to have a zone of illuviation. Young soils do not have well developed pedogenic horizons and have a content of carbon that decreases irregularly with increasing depth.

Geology

By Mark E. Hall, geologist, Natural Resources Conservation Service

Webster County is located in the Fall Line Hills District of the Coastal Plain Physiographic Province. The district is highly dissected by streams. The stream valleys are 50 to 250 feet below the adjacent ridgetops (Clark and Zisa, 1976).

The majority of the surface geology of Webster County is comprised of seven sedimentary units. The units range in age from Upper Cretaceous (80 million years ago) to Miocene (23.8 to 5.3 million years ago). The strike of these units is about north 60° to 70° east, dipping shallowly to the southeast. These units are, in ascending order from oldest to youngest, the Ripley Formation, Providence Formation, Clayton Formation, Nanafalia Formation, Tuscahoma Formation, Claiborne Group, and Altamaha Formation. The following descriptions of these units are from Reinhardt (and others, 1994) and Cocker (2004).

The Upper Cretaceous Ripley Formation is described by Cocker (2004) as a massive, bioturbated, fine to very fine, calcareous quartz sand. The formation contains abundant mica and glauconite and is locally fossiliferous.

The Providence Formation is the predominantly exposed unit in the northwestern tip of Webster County. This highly erodible formation consists of pale yellow, cross-bedded, fine- to coarse-grained sand inter-bedded with yellowish-brown, massive to thinly bedded lenses of sandy clay.

The Lower Paleocene Clayton Formation unconformably overlies the Providence Formation. Cocker (2004) describes the Clayton Formation as primarily residuum consisting of “red, buff to dark brown, white to light gray and black clay, white chert, and red to black iron oxide masses.” Reinhardt (and others, 1994) report that the formation consists of limestone interbedded with micaceous silty clay and calcareous limestone.

The Nanafalia Formation is an Upper Paleocene formation that unconformably overlies the Clayton Formation. The Nanafalia Formation is composed of a fine- to coarse-grained, cross-bedded to massive, greenish gray to white, micaceous, kaolinitic quartz sandstone. The formation locally contains layers of potentially economic, high-alumina kaolin and bauxite deposits.

The Upper Paleocene to Lower Eocene Tuscahoma Formation unconformably overlies the Nanafalia Formation. The Tuscahoma Formation consists of dark gray and red to purple, nonfossiliferous, interlaminated clay, silt, and quartz sand beds.

The Nanafalia and Tuscahoma Formations are unconformably overlain by the Claiborne Group. Cocker (2004) refers to the Claiborne Group as “massive to finely laminated, locally cross-bedded, white to light tan to brick-red, locally kaolinitic, fine- to coarse-grained sand and poorly indurated sandstone.” This unit is highly susceptible to erosion.

The Altamaha Formation is a Miocene deposit consisting of a massive, brick red, argillaceous sandstone with basal conglomerate chert residuum, iron-oxide-cemented sandstone, or iron-oxide crusts. This formation is characterized by small, rounded, iron-oxide pebbles that are abundant at the surface.

Quaternary alluvium in the county consists of poorly sorted, fine- to coarse-grained, variably micaceous sediment along flood plains and stream channels.

Discussion

The triangular shaped, northwestern portion of Webster County is underlain by the sands of the Providence Formation. These sands correspond well to the deep sandy soils mapped in the area, particularly the Troup series. The older, underlying Ripley Formation outcrops just above the flood plains of the stream valleys. The Nanafalia Formation becomes the more prominent surficial unit further south within the northwest corner of the county. The Clayton Formation in Webster County consists of a thin bed (3 to 33 feet thick) between the Providence Formation and the Nanafalia Formation.

The remainder of the county consists primarily of the Claiborne Group with the Altamaha Formation exposed in the higher elevations. The Altamaha Formation provides a protective cap rock over the softer, more highly erodible formations. Narrow exposures of the Tuscahoma Formation outcrop along the outer edge of the flood plains along the major streams in the southern part of the county. Similarly, in the northeastern corner of the county, the Tuscahoma, Nanafalia, and Clayton Formations are exposed in the stream valleys. The correspondence between soil series and geologic formations is not consistent in these areas. The lack of correspondence is likely due to the intense, subtropical climate and to groundwater alteration, which obliterates most of the primary sedimentary textures, colors, and fossils near the surface (Cocker, 2004).

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Glossary

Many of the terms relating to landforms, geology, and geomorphology are defined in more detail in the “National Soil Survey Handbook” (available in local offices of the Natural Resources Conservation Service or on the Internet).

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvium. Unconsolidated material, such as gravel, sand, silt, clay, and various mixtures of these, deposited on land by running water.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A dense, compact, slowly permeable subsoil layer that contains much more clay than the overlying materials, from which it is separated by a sharply defined boundary. A claypan is commonly hard when dry and plastic and sticky when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Unconsolidated, unsorted earth material being transported or deposited on side slopes and/or at the base of slopes by mass movement (e.g., direct gravitational action) and by local, unconcentrated runoff.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Conglomerate. A coarse grained, clastic sedimentary rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosion (soil survey interpretations). Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the “Soil Survey Manual.”

Drainage, surface. Runoff, or surface flow of water, from an area.

Drainageway. A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at some time move concentrated water and either do not have a defined channel or have only a small defined channel.

Draw. A small stream valley that generally is shallower and more open than a ravine or gulch and that has a broader bottom. The present stream channel may appear inadequate to have cut the drainageway that it occupies.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fine textured soil. Sandy clay, silty clay, or clay.

Flood plain. The nearly level plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers or streams; produced by stream or river action.

Footslope. The concave surface at the base of a hillslope. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Hill. A generic term for an elevated area of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline. Slopes are generally more than 15 percent. The distinction between a hill and a mountain is arbitrary and may depend on local usage.

Hillslope. A generic term for the steeper part of a hill between its summit and the drainage line, valley flat, or depression floor at the base of a hill.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

L horizon.—A layer of organic and mineral limnic materials, including coprogenous earth (sedimentary peat), diatomaceous earth, and marl.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The

B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Interfluve. A landform composed of the relatively undissected upland or ridge between two adjacent valleys containing streams flowing in the same general direction. An elevated area between two drainageways that sheds water to those drainageways.

Interfluve (geomorphology). A geomorphic component of hills consisting of the uppermost, comparatively level or gently sloping area of a hill; shoulders of backwearing hillslopes can narrow the upland or can merge, resulting in a strongly convex shape.

Iron depletions. See Redoximorphic features.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Ksat. Saturated hydraulic conductivity. (See Permeability.)

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low strength. The soil is not strong enough to support loads.

Map unit. A collection of areas defined and named the same in terms of their soil components or miscellaneous (nonsoil) areas or both. Each map unit differs in some respect from all others in a survey area, and each has a symbol that uniquely identifies the map unit on a soil map. Each individual polygon, point, or line so identified on the map is referred to as a delineation.

Map unit component. A distinct kind of soil, generally a phase of a taxonomic unit, or miscellaneous (nonsoil) area within a soil map unit. Components can be categorized as either major or minor. The names of major components are used to name the map unit. Each component of a map unit has a unique set of soil properties that differentiates it from other components within the same map unit. Each is assigned a designated range in proportionate extent (percent) within the map unit.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal proportions; formed primarily under freshwater lacustrine conditions but also formed in more saline environments.

Masses. See Redoximorphic features.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mine spoil. An accumulation of displaced earthy material, rock, or other waste material removed during mining or excavation. Also called earthy fill.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. A kind of map unit that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Mountain. A generic term for an elevated area of the land surface, rising more than 1,000 feet (300 meters) above surrounding lowlands, commonly of restricted

summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range. Mountains are formed primarily by tectonic activity and/or volcanic action but can also be formed by differential erosion.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. See Redoximorphic features.

Nose slope (geomorphology). A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent. Nose slopes consist dominantly of colluvium and slope-wash sediments (for example, slope alluvium).

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Pore linings. See Redoximorphic features.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed as pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. See Redoximorphic features.

Redoximorphic depletions. See Redoximorphic features.

Redoximorphic features. Redoximorphic features are associated with wetness and result from alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Reduction occurs during saturation with water, and oxidation occurs when the soil is not saturated. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which

case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese are oxidized and precipitated, they form either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redoximorphic processes in a soil may result in redoximorphic features that are defined as follows:

1. Redoximorphic concentrations.—These are zones of apparent accumulation of iron-manganese oxides, including:
   A. Nodules and concretions, which are cemented bodies that can be removed from the soil intact. Concretions are distinguished from nodules on the basis of internal organization. A concretion typically has concentric layers that are visible to the naked eye. Nodules do not have visible organized internal structure; *and*
   B. Masses, which are noncemented concentrations of substances within the soil matrix; *and*
   C. Pore linings, i.e., zones of accumulation along pores that may be either coatings on pore surfaces or impregnations from the matrix adjacent to the pores.
2. Redoximorphic depletions.—These are zones of low chroma (chromas less than those in the matrix) where either iron-manganese oxides alone or both iron-manganese oxides and clay have been stripped out, including:
   A. Iron depletions, i.e., zones that contain low amounts of iron and manganese oxides but have a clay content similar to that of the adjacent matrix; *and*
   B. Clay depletions, i.e., zones that contain low amounts of iron, manganese, and clay (often referred to as silt coatings or skeletans).
3. Reduced matrix.—This is a soil matrix that has low chroma *in situ* but undergoes a change in hue or chroma within 30 minutes after the soil material has been exposed to air.

Reduced matrix. See Redoximorphic features.

Relief. The relative difference in elevation between the upland summits and the lowlands or valleys of a given region.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as bedrock disintegrated in place.

Rill. A very small, steep-sided channel resulting from erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. A rill generally is not an obstacle to wheeled vehicles and is shallow enough to be smoothed over by ordinary tillage.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Saturated hydraulic conductivity (Ksat). See Permeability.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Sedimentary rock. A consolidated deposit of clastic particles, chemical precipitates, or organic remains accumulated at or near the surface of the earth under normal low temperature and pressure conditions. Sedimentary rocks include consolidated equivalents of alluvium, colluvium, drift, and eolian, lacustrine, and

marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.

Series, soil. A group of soils that have profiles that are almost alike. All the soils of a given series have horizons that are similar in composition, thickness, and arrangement.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The convex, erosional surface near the top of a hillslope. A shoulder is a transition from summit to backslope.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope (geomorphology). A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel. Side slopes are dominantly colluvium and slope-wash sediments.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. An indurated silt having the texture and composition of shale but lacking its fine lamination or fissility; a massive mudstone in which silt predominates over clay.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Nearly level	0 to 2 percent
Very gently sloping	2 to 5 percent
Gently sloping	5 to 8 percent
Moderately sloping	8 to 12 percent
Strongly sloping	12 to 15 percent
Moderately steep	15 to 25 percent
Steep	25 to 40 percent
Very steep	40 percent and higher

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned flood plain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Terrace (conservation). An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geomorphology). A steplike surface, bordering a valley floor or shoreline, that represents the former position of a flood plain, lake, or seashore. The term is usually applied both to the relatively flat summit surface (tread) that was cut or built by stream or wave action and to the steeper descending slope (scarp or riser) that has graded to a lower base level of erosion.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Upland. An informal, general term for the higher ground of a region, in contrast with a low-lying adjacent area, such as a valley or plain, or for land at a higher elevation than the flood plain or low stream terrace; land above the footslope zone of the hillslope continuum.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Weathering. All physical disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth's surface by atmospheric or biologic agents or by circulating surface waters but involving essentially no transport of the altered material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Tables

Table 1.--Temperature and Precipitation

[Recorded in the period 1971-2000 at Lumpkin, Georgia]

Month	Temperature: Average daily maximum	Temperature: Average daily minimum	Temperature: Average	Temperature: 2 years in 10 will have-- Max. temp. higher than--	Temperature: 2 years in 10 will have-- Min. temp. lower than--	Temperature: Average number of growing degree days*	Precipitation: Average	Precipitation: 2 years in 10 will have-- Less than--	Precipitation: 2 years in 10 will have-- More than--	Precipitation: Average number of days with 0.10 inch	Precipitation: Average snowfall
	°F	*°F*	*°F*	*°F*	*°F*	*Units*	*In*	*In*	*In*		*In*
January----	59.5	35.4	47.4	78	10	82	5.19	2.84	7.59	6	0.0
February---	64.3	37.0	50.6	80	13	116	4.70	2.42	6.90	6	0.0
March------	71.1	42.5	56.8	85	21	236	5.67	3.46	7.85	6	0.0
April------	77.6	48.1	62.8	90	29	379	3.89	1.55	6.14	5	0.0
May--------	83.9	56.5	70.2	94	38	618	2.94	1.43	4.51	5	0.0
June-------	89.1	63.8	76.5	99	48	792	4.01	2.04	5.73	6	0.0
July-------	91.7	67.8	79.8	101	58	907	5.43	2.40	7.96	7	0.0
August-----	91.1	67.0	79.0	100	56	898	3.57	1.91	5.09	6	0.0
September--	87.0	62.8	74.9	97	44	743	2.88	.72	5.12	4	0.0
October----	78.7	50.6	64.7	91	29	443	2.55	.48	4.54	3	0.0
November---	70.0	42.7	56.3	85	22	229	3.52	1.43	5.41	4	0.0
December---	61.9	37.1	49.5	79	14	108	3.64	1.83	5.37	5	0.0
Yearly:											
Average--	77.1	50.9	64.0	---	---	---	---	---	---	---	---
Extreme--	105	-4	---	102	8	---	---	---	---	---	---
Total----	---	---	---	---	---	5,550	48.00	36.00	54.46	63	0.0

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Table 2.--Freeze Dates in Spring and Fall

[Recorded in the period 1971-2000 at Lumpkin, Georgia]

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Mar. 11	Apr. 3	Apr. 19
2 years in 10 later than--	Mar. 5	Mar. 27	Apr. 15
5 years in 10 later than--	Feb. 22	Mar. 15	Apr. 6
First freezing temperature in fall:			
1 year in 10 earlier than--	Nov. 14	Oct. 29	Oct. 14
2 years in 10 earlier than--	Nov. 19	Nov. 4	Oct. 21
5 years in 10 earlier than--	Nov. 29	Nov. 16	Nov. 2

Table 3.--Growing Season

[Recorded in the period 1971-2000 at Lumpkin, Georgia]

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	*Days*	*Days*
9 years in 10	259	215	191
8 years in 10	266	225	199
5 years in 10	280	242	213
2 years in 10	295	260	228
1 year in 10	302	269	236

Table 4.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
ArC	Arents, reclaimed land, 0 to 8 percent slopes	295	0.2
BeB	Benevolence loamy sand, 0 to 5 percent slopes	3,890	2.9
BeC	Benevolence loamy sand, 5 to 8 percent slopes	480	0.4
BoB	Bonneau loamy sand, 0 to 5 percent slopes	2,970	2.2
BoC	Bonneau loamy sand, 5 to 8 percent slopes	715	0.5
CoB	Cowarts-Nankin complex, 2 to 5 percent slopes	125	*
FeA	Faceville sandy loam, 0 to 2 percent slopes	990	0.7
FeB	Faceville sandy loam, 2 to 5 percent slopes	2,700	2.0
FeC	Faceville sandy loam, 5 to 8 percent slopes	1,155	0.9
GoA	Goldsboro loamy sand, 0 to 2 percent slopes	585	0.4
GrA	Grady clay loam, ponded	100	*
GsA	Greenville sandy clay loam, 0 to 2 percent slopes	1,105	0.8
GsB	Greenville sandy clay loam, 2 to 5 percent slopes	2,370	1.8
GsC	Greenville sandy clay loam, 5 to 8 percent slopes	1,495	1.1
GvD2	Greenville sandy clay, 8 to 15 percent slopes, eroded	60	*
KBA	Kinston and Bibb soils, 0 to 1 percent slopes, frequently flooded	18,540	13.8
LmB	Lucy loamy sand, 0 to 5 percent slopes	10,800	8.0
LmC	Lucy loamy sand, 5 to 8 percent slopes	3,145	2.3
LmD	Lucy loamy sand, 8 to 15 percent slopes	715	0.5
NcD	Nankin-Cowarts complex, 5 to 15 percent slopes	11,085	8.2
NcF	Nankin-Cowarts complex, 15 to 35 percent slopes	10,900	8.1
NoA	Norfolk loamy sand, 0 to 2 percent slopes	235	0.2
NoB	Norfolk loamy sand, 2 to 5 percent slopes	680	0.5
OBB	Ochlockonee, Iuka, and Bibb soils, 0 to 5 percent slopes, frequently flooded	1,030	0.8
OcA	Ocilla loamy sand, 0 to 2 percent slopes	920	0.7
OeA	Orangeburg loamy sand, 0 to 2 percent slopes	2,880	2.1
OeB	Orangeburg loamy sand, 2 to 5 percent slopes	11,990	8.9
OgC2	Orangeburg sandy loam, 5 to 8 percent slopes, eroded	5,410	4.0
OgD2	Orangeburg sandy loam, 8 to 15 percent slopes, eroded	775	0.6
RaA	Rains sandy loam, 0 to 2 percent slopes, occasionally flooded	95	*
ReA	Red Bay loamy sand, 0 to 2 percent slopes	800	0.6
ReB	Red Bay loamy sand, 2 to 5 percent slopes	1,910	1.4
RsC2	Red Bay sandy loam, 5 to 8 percent slopes, eroded	355	0.3
RsD2	Red Bay sandy loam, 8 to 15 percent slopes, eroded	15	*
SuC2	Sunsweet sandy loam, 2 to 8 percent slopes, eroded	10	*
SuD2	Sunsweet sandy loam, 8 to 12 percent slopes, eroded	10	*
TfB2	Tifton sandy loam, 2 to 5 percent slopes, eroded	75	*
TfC2	Tifton sandy loam, 5 to 8 percent slopes, eroded	10	*
TrB	Troup loamy sand, 0 to 5 percent slopes	25,820	19.2
TrD	Troup loamy sand, 5 to 15 percent slopes	6,145	4.6
W	Water	1,015	0.8
	Total	134,400	100.0

* Less than 0.1 percent.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture

[Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil]

Map symbol and soil name	Land capability	Corn	Cotton lint	Improved bermudagrass	Peanuts	Soybeans
		Bu	*Lbs*	*AUM*	*Lbs*	*Bu*
ArC:						
Arents, reclaimed land.						
BeB:						
Benevolence	2e	75	650	10	2,800	25
BeC:						
Benevolence	3e	75	650	10	2,800	25
BoB:						
Bonneau	2s	85	700	8.5	2,900	30
BoC:						
Bonneau	3s	85	700	8.5	2,900	30
CoB:						
Cowarts	2e	80	650	8	2,400	35
Nankin	2e	75	600	6	2,200	30
FeA:						
Faceville	1	115	875	10	4,000	45
FeB:						
Faceville	2e	115	875	10	4,000	45
FeC:						
Faceville	3e	90	650	9.5	3,000	30
GoA:						
Goldsboro	2w	125	700	10	3,600	42
GrA:						
Grady	5w	---	---	---	---	---
GsA:						
Greenville	1	100	825	11	3,200	45
GsB:						
Greenville	3e	95	800	11	3,000	35
GsC:						
Greenville	4e	85	700	10	2,600	25
GvD2:						
Greenville	6e	---	---	8.5	---	---
KBA:						
Kinston	6w	---	---	---	---	---
Bibb	6w	---	---	---	---	---
LmB:						
Lucy	2s	80	650	8	3,000	33
LmC:						
Lucy	3s	70	600	7.5	2,500	25

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Cotton lint	Improved bermudagrass	Peanuts	Soybeans
		Bu	*Lbs*	*AUM*	*Lbs*	*Bu*
LmD:						
Lucy	4s	---	---	6	---	---
NcD:						
Nankin	4e	---	---	6	---	---
Cowarts	4e	---	---	7.5	---	---
NcF:						
Nankin	6e	---	---	6	---	---
Cowarts	6e	---	---	7.5	---	---
NoA:						
Norfolk	1	100	750	10	3,700	35
NoB:						
Norfolk	2e	100	650	10	3,700	35
OBB:						
Ochlockonee	2w	110	---	8	---	40
Iuka	2w	110	750	9	---	40
Bibb	6w	---	---	---	---	---
OcA:						
Ocilla	3w	75	600	8.5	2,200	35
OeA:						
Orangeburg	1	120	900	10.5	4,000	45
OeB:						
Orangeburg	2e	120	900	10.5	4,000	45
OgC2:						
Orangeburg	3e	95	800	10	3,200	35
OgD2:						
Orangeburg	4e	75	600	9	2,600	30
RaA:						
Rains	5w	---	---	10	---	---
ReA:						
Red Bay	1	90	750	10	3,500	40
ReB:						
Red Bay	2e	90	750	9.5	3,200	40
RsC2:						
Red Bay	3e	85	700	8	2,800	30
RsD2:						
Red Bay	4e	75	600	7	2,600	25
SuC2:						
Sunsweet	4e	---	---	6	---	---
SuD2:						
Sunsweet	6e	---	---	4.5	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Cotton lint	Improved bermudagrass	Peanuts	Soybeans
		Bu	*Lbs*	*AUM*	*Lbs*	*Bu*
TfB2:						
Tifton------------------	2e	100	800	10	3,400	40
TfC2:						
Tifton------------------	3e	80	650	9	3,000	34
TrB:						
Troup-------------------	3s	70	600	7	2,500	25
TrD:						
Troup-------------------	4s	60	550	6.5	2,200	20

Table 6.--Prime Farmland and Farmland of Statewide Importance

[Only the soils considered prime or important farmland are listed. Urban or built-up areas of the soils listed are not considered prime or important farmland]

Map symbol	Map unit name	Farmland Classification
BeB	Benevolence loamy sand, 0 to 5 percent slopes	All areas are prime farmland
BeC	Benevolence loamy sand, 5 to 8 percent slopes	All areas are prime farmland
BoB	Bonneau loamy sand, 0 to 5 percent slopes	Farmland of statewide importance
BoC	Bonneau loamy sand, 5 to 8 percent slopes	Farmland of statewide importance
CoB	Cowarts-Nankin complex, 2 to 5 percent slopes	All areas are prime farmland
FeA	Faceville sandy loam, 0 to 2 percent slopes	All areas are prime farmland
FeB	Faceville sandy loam, 2 to 5 percent slopes	All areas are prime farmland
FeC	Faceville sandy loam, 5 to 8 percent slopes	All areas are prime farmland
GoA	Goldsboro loamy sand, 0 to 2 percent slopes	All areas are prime farmland
GsA	Greenville sandy clay loam, 0 to 2 percent slopes	All areas are prime farmland
GsB	Greenville sandy clay loam, 2 to 5 percent slopes	All areas are prime farmland
GsC	Greenville sandy clay loam, 5 to 8 percent slopes	Farmland of statewide importance
LmB	Lucy loamy sand, 0 to 5 percent slopes	Farmland of statewide importance
LmC	Lucy loamy sand, 5 to 8 percent slopes	Farmland of statewide importance
NoA	Norfolk loamy sand, 0 to 2 percent slopes	All areas are prime farmland
NoB	Norfolk loamy sand, 2 to 5 percent slopes	All areas are prime farmland
OcA	Ocilla loamy sand, 0 to 2 percent slopes	Farmland of statewide importance
OeA	Orangeburg loamy sand, 0 to 2 percent slopes	All areas are prime farmland
OeB	Orangeburg loamy sand, 2 to 5 percent slopes	All areas are prime farmland
OgC2	Orangeburg sandy loam, 5 to 8 percent slopes, eroded	All areas are prime farmland
ReA	Red Bay loamy sand, 0 to 2 percent slopes	All areas are prime farmland
ReB	Red Bay loamy sand, 2 to 5 percent slopes	All areas are prime farmland
RsC2	Red Bay sandy loam, 5 to 8 percent slopes, eroded	All areas are prime farmland
SuC2	Sunsweet sandy loam, 2 to 8 percent slopes, eroded	Farmland of statewide importance
TfB2	Tifton sandy loam, 2 to 5 percent slopes, eroded	All areas are prime farmland
TfC2	Tifton sandy loam, 5 to 8 percent slopes, eroded	All areas are prime farmland

Table 7.--Forestland Productivity

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
ArC:				
Arents, reclaimed land.				
BeB:				
Benevolence	Loblolly pine	90	129	Loblolly pine
	Shortleaf pine	72	114	
BeC:				
Benevolence	Loblolly pine	90	129	Loblolly pine
	Shortleaf pine	72	114	
BoB:				
Bonneau	Hickory	---	---	Loblolly pine, longleaf pine
	Loblolly pine	95	143	
	Longleaf pine	75	86	
	White oak	---	---	
BoC:				
Bonneau	Hickory	---	---	Loblolly pine, longleaf pine
	Loblolly pine	95	143	
	Longleaf pine	75	86	
	White oak	---	---	
CoB:				
Cowarts	Loblolly pine	86	129	Loblolly pine, longleaf pine
	Longleaf pine	67	72	
Nankin	Loblolly pine	80	114	Loblolly pine
	Longleaf pine	70	86	
FeA:				
Faceville	Loblolly pine	82	114	Loblolly pine
	Longleaf pine	65	72	
FeB:				
Faceville	Loblolly pine	82	114	Loblolly pine
	Longleaf pine	65	72	
FeC:				
Faceville	Loblolly pine	82	114	Loblolly pine
	Longleaf pine	65	72	
GoA:				
Goldsboro	Loblolly pine	90	129	Loblolly pine
	Longleaf pine	73	86	
	Red maple	---	---	
	Southern red oak	---	---	
	Sweetgum	---	---	
	Water oak	---	---	
	White oak	---	---	
	Yellow poplar	---	---	
GrA:				
Grady	Baldcypress	65	43	American sycamore, water tupelo
	Water oak	65	57	
	Water tupelo	68	86	
GsA:				
Greenville	Loblolly pine	82	114	Loblolly pine, longleaf pine
	Longleaf pine	70	86	

Table 7.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
GsB:				
Greenville	Loblolly pine	82	114	Loblolly pine, longleaf pine
	Longleaf pine	70	86	
GsC:				
Greenville	Loblolly pine	82	114	Loblolly pine, longleaf pine
	Longleaf pine	70	86	
GvD2:				
Greenville	Loblolly pine	82	114	Loblolly pine, longleaf pine
	Longleaf pine	70	86	
KBA:				
Kinston	Cherrybark oak	95	57	American sycamore, cherrybark oak, eastern cottonwood, green ash, loblolly pine, sweetgum, yellow poplar
	Eastern cottonwood	100	129	
	Loblolly pine	100	129	
	Sweetgum	95	114	
	White oak	90	57	
Bibb	Atlantic white cedar	---	---	Eastern cottonwood, loblolly pine, sweetgum, yellow poplar
	Blackgum	---	---	
	Loblolly pine	100	157	
	Sweetgum	90	100	
	Water oak	90	86	
	Yellow poplar	---	---	
LmB:				
Lucy	Loblolly pine	80	114	Loblolly pine, longleaf pine
	Longleaf pine	70	86	
LmC:				
Lucy	Loblolly pine	80	114	Loblolly pine, longleaf pine
	Longleaf pine	70	86	
LmD:				
Lucy	Loblolly pine	80	114	Loblolly pine, longleaf pine
	Longleaf pine	70	86	
NcD:				
Nankin	Loblolly pine	80	114	Loblolly pine
	Longleaf pine	70	86	
Cowarts	Loblolly pine	86	129	Loblolly pine, longleaf pine
	Longleaf pine	67	72	
NcF:				
Nankin	Loblolly pine	80	114	Loblolly pine
	Longleaf pine	70	86	
Cowarts	Loblolly pine	86	129	Loblolly pine, longleaf pine
	Longleaf pine	67	72	

Table 7.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
NoA:				
Norfolk	Blackgum	---	---	Loblolly pine
	Hickory	---	---	
	Loblolly pine	84	114	
	Longleaf pine	77	100	
	Southern red oak	---	---	
	White oak	---	---	
	Yellow poplar	---	---	
NoB:				
Norfolk	Blackgum	---	---	Loblolly pine
	Hickory	---	---	
	Loblolly pine	84	114	
	Longleaf pine	77	100	
	Southern red oak	---	---	
	White oak	---	---	
	Yellow poplar	---	---	
OBB:				
Ochlockonee	Eastern cottonwood	100	129	Eastern cottonwood, loblolly pine, yellow poplar
	Loblolly pine	100	157	
	Sweetgum	90	100	
	Water oak	80	72	
	Yellow poplar	110	129	
Iuka	Eastern cottonwood	105	143	Eastern cottonwood, loblolly pine, yellow poplar
	Loblolly pine	100	129	
	Sweetgum	100	143	
	Water oak	100	100	
Bibb	Atlantic white cedar	---	---	Eastern cottonwood, loblolly pine, sweetgum, yellow poplar
	Blackgum	---	---	
	Loblolly pine	100	157	
	Sweetgum	90	100	
	Water oak	90	86	
	Yellow poplar	---	---	
OcA:				
Ocilla	Loblolly pine	85	114	Loblolly pine
	Longleaf pine	77	100	
OeA:				
Orangeburg	Loblolly pine	80	114	Loblolly pine
	Longleaf pine	77	100	
OeB:				
Orangeburg	Loblolly pine	80	114	Loblolly pine
	Longleaf pine	77	100	
OgC2:				
Orangeburg	Loblolly pine	80	114	Loblolly pine
	Longleaf pine	77	100	
OgD2:				
Orangeburg	Loblolly pine	80	114	Loblolly pine
	Longleaf pine	77	100	

Table 7.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
RaA:				
Rains	Loblolly pine	94	143	American sycamore, loblolly pine, sweetgum
	Sweetgum	90	100	
ReA:				
Red Bay	Loblolly pine	90	129	Loblolly pine, longleaf pine
	Longleaf pine	77	100	
ReB:				
Red Bay	Loblolly pine	90	129	Loblolly pine, longleaf pine
	Longleaf pine	77	100	
RsC2:				
Red Bay	Loblolly pine	90	129	Loblolly pine, longleaf pine
	Longleaf pine	77	100	
RsD2:				
Red Bay	Loblolly pine	90	129	Loblolly pine, longleaf pine
	Longleaf pine	77	100	
SuC2:				
Sunsweet	Loblolly pine	85	114	Loblolly pine, slash pine
	Longleaf pine	70	86	
	Slash pine	85	157	
SuD2:				
Sunsweet	Loblolly pine	85	114	Loblolly pine, slash pine
	Longleaf pine	70	86	
	Slash pine	85	157	
TfB2:				
Tifton	Loblolly pine	86	129	Loblolly pine, slash pine
	Longleaf pine	72	86	
	Slash pine	86	157	
TfC2:				
Tifton	Loblolly pine	86	129	Loblolly pine, slash pine
	Longleaf pine	72	86	
	Slash pine	86	157	
TrB:				
Troup	Loblolly pine	80	114	Loblolly pine, longleaf pine
	Longleaf pine	70	86	
TrD:				
Troup	Loblolly pine	80	114	Loblolly pine, longleaf pine
	Longleaf pine	70	86	

Table 8a.--Forestland Management (Part 1)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Suitability for hand planting		Suitability for mechanical planting		Potential for seedling mortality	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ArC:						
Arents, reclaimed land	Not rated		Not rated		Not rated	
BeB:						
Benevolence	Well suited		Well suited		Low	
BeC:						
Benevolence	Well suited		Moderately suited		Low	
			Slope	0.50		
BoB:						
Bonneau	Well suited		Well suited		Low	
BoC:						
Bonneau	Well suited		Moderately suited		Low	
			Slope	0.50		
CoB:						
Cowarts	Well suited		Well suited		Low	
Nankin	Well suited		Well suited		Low	
FeA:						
Faceville	Poorly suited		Poorly suited		Low	
	Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75		
FeB:						
Faceville	Poorly suited		Poorly suited		Low	
	Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75		
FeC:						
Faceville	Poorly suited		Poorly suited		Low	
	Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75		
			Slope	0.50		
GoA:						
Goldsboro	Well suited		Well suited		Low	
GrA:						
Grady	Poorly suited		Poorly suited		High	
	Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Wetness	1.00
GsA:						
Greenville	Poorly suited		Poorly suited		Low	
	Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75		
GsB:						
Greenville	Poorly suited		Poorly suited		Low	
	Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75		

Table 8a.--Forestland Management (Part 1)--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
GsC:						
Greenville	Poorly suited		Poorly suited		Low	
	Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75		
			Slope	0.50		
GvD2:						
Greenville	Poorly suited		Poorly suited		Low	
	Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75		
			Slope	0.50		
KBA:						
Kinston	Moderately suited		Moderately suited		High	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Wetness	1.00
Bibb	Well suited		Well suited		High	
					Wetness	1.00
LmB:						
Lucy	Well suited		Well suited		Low	
LmC:						
Lucy	Well suited		Moderately suited		Low	
			Slope	0.50		
LmD:						
Lucy	Well suited		Moderately suited		Low	
			Slope	0.50		
NcD:						
Nankin	Well suited		Moderately suited		Low	
			Slope	0.50		
Cowarts	Well suited		Moderately suited		Low	
			Slope	0.50		
NcF:						
Nankin	Well suited		Unsuited		Moderate	
			Slope	1.00	Available water	0.50
Cowarts	Well suited		Unsuited		Moderate	
			Slope	1.00	Available water	0.50
NoA:						
Norfolk	Well suited		Well suited		Low	
NoB:						
Norfolk	Well suited		Well suited		Low	
OBB:						
Ochlockonee	Well suited		Well suited		High	
					Wetness	1.00
Iuka	Well suited		Well suited		High	
					Wetness	1.00
Bibb	Well suited		Well suited		High	
					Wetness	1.00

Table 8a.--Forestland Management (Part 1)--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
OcA:						
Ocilla	Well suited		Well suited		Low	
OeA:						
Orangeburg	Well suited		Well suited		Low	
OeB:						
Orangeburg	Well suited		Well suited		Low	
OgC2:						
Orangeburg	Well suited		Moderately suited		Low	
			Slope	0.50		
OgD2:						
Orangeburg	Well suited		Moderately suited		Low	
			Slope	0.50		
RaA:						
Rains	Well suited		Well suited		High	
					Wetness	1.00
ReA:						
Red Bay	Well suited		Well suited		Low	
ReB:						
Red Bay	Well suited		Well suited		Low	
RsC2:						
Red Bay	Well suited		Moderately suited		Low	
			Slope	0.50		
RsD2:						
Red Bay	Well suited		Moderately suited		Low	
			Slope	0.50		
SuC2:						
Sunsweet	Well suited		Moderately suited		Low	
			Slope	0.50		
SuD2:						
Sunsweet	Well suited		Moderately suited		Low	
			Slope	0.50		
TfB2:						
Tifton	Well suited		Well suited		Low	
TfC2:						
Tifton	Well suited		Moderately suited		Low	
			Slope	0.50		
TrB:						
Troup	Moderately suited		Moderately suited		Moderate	
	Sandiness	0.50	Sandiness	0.50	Available water	0.50
TrD:						
Troup	Moderately suited		Moderately suited		Moderate	
	Sandiness	0.50	Slope	0.50	Available water	0.50
			Sandiness	0.50		

Table 8b.--Forestland Management (Part 2)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value
ArC:				
Arents, reclaimed land	Not rated		Not rated	
BeB:				
Benevolence	Slight		Well suited	
BeC:				
Benevolence	Moderate		Moderately suited	
	Slope/erodibility	0.50	Slope	0.50
BoB:				
Bonneau	Slight		Well suited	
BoC:				
Bonneau	Moderate		Moderately suited	
	Slope/erodibility	0.50	Slope	0.50
CoB:				
Cowarts	Slight		Well suited	
Nankin	Slight		Well suited	
FeA:				
Faceville	Slight		Well suited	
FeB:				
Faceville	Moderate		Well suited	
	Slope/erodibility	0.50		
FeC:				
Faceville	Moderate		Moderately suited	
	Slope/erodibility	0.50	Slope	0.50
GoA:				
Goldsboro	Slight		Well suited	
GrA:				
Grady	Slight		Poorly suited	
			Ponding	1.00
			Wetness	1.00
			Low strength	0.50
GsA:				
Greenville	Slight		Moderately suited	
			Low strength	0.50
GsB:				
Greenville	Moderate		Moderately suited	
	Slope/erodibility	0.50	Low strength	0.50
GsC:				
Greenville	Moderate		Moderately suited	
	Slope/erodibility	0.50	Low strength	0.50
			Slope	0.50

Table 8b.--Forestland Management (Part 2)--Continued

Map symbol and soil name	Hazard of erosion on roads and trails: Rating class and limiting features	Hazard of erosion on roads and trails: Value	Suitability for roads (natural surface): Rating class and limiting features	Suitability for roads (natural surface): Value
GvD2:				
Greenville	Severe		Moderately suited	
	Slope/erodibility	0.95	Slope	0.50
			Low strength	0.50
			Stickiness; high plasticity index	0.50
KBA:				
Kinston	Slight		Poorly suited	
			Flooding	1.00
			Wetness	1.00
Bibb	Slight		Poorly suited	
			Flooding	1.00
			Wetness	1.00
LmB:				
Lucy	Slight		Well suited	
LmC:				
Lucy	Moderate		Moderately suited	
	Slope/erodibility	0.50	Slope	0.50
LmD:				
Lucy	Moderate		Moderately suited	
	Slope/erodibility	0.50	Slope	0.50
NcD:				
Nankin	Moderate		Moderately suited	
	Slope/erodibility	0.50	Slope	0.50
Cowarts	Moderate		Moderately suited	
	Slope/erodibility	0.50	Slope	0.50
NcF:				
Nankin	Severe		Poorly suited	
	Slope/erodibility	0.95	Slope	1.00
Cowarts	Severe		Poorly suited	
	Slope/erodibility	0.95	Slope	1.00
NoA:				
Norfolk	Slight		Well suited	
NoB:				
Norfolk	Slight		Well suited	
OBB:				
Ochlockonee	Slight		Poorly suited	
			Flooding	1.00
Iuka	Slight		Poorly suited	
			Flooding	1.00
Bibb	Slight		Poorly suited	
			Flooding	1.00
			Wetness	1.00
OcA:				
Ocilla	Slight		Moderately suited	
			Wetness	0.50

Table 8b.--Forestland Management (Part 2)--Continued

Map symbol and soil name	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
OeA:				
Orangeburg	Slight		Well suited	
OeB:				
Orangeburg	Slight		Well suited	
OgC2:				
Orangeburg	Moderate		Moderately suited	
	Slope/erodibility	0.50	Slope	0.50
OgD2:				
Orangeburg	Moderate		Moderately suited	
	Slope/erodibility	0.50	Slope	0.50
RaA:				
Rains	Slight		Poorly suited	
			Wetness	1.00
			Flooding	0.50
ReA:				
Red Bay	Slight		Well suited	
ReB:				
Red Bay	Slight		Well suited	
RsC2:				
Red Bay	Moderate		Moderately suited	
	Slope/erodibility	0.50	Slope	0.50
RsD2:				
Red Bay	Moderate		Moderately suited	
	Slope/erodibility	0.50	Slope	0.50
SuC2:				
Sunsweet	Moderate		Well suited	
	Slope/erodibility	0.50		
SuD2:				
Sunsweet	Severe		Moderately suited	
	Slope/erodibility	0.95	Slope	0.50
TfB2:				
Tifton	Slight		Well suited	
TfC2:				
Tifton	Moderate		Moderately suited	
	Slope/erodibility	0.50	Slope	0.50
TrB:				
Troup	Slight		Moderately suited	
			Sandiness	0.50
TrD:				
Troup	Moderate		Moderately suited	
	Slope/erodibility	0.50	Slope	0.50
			Sandiness	0.50

Table 8c.--Forestland Management (Part 3)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Suitability for use of harvesting equipment: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value
ArC:				
Arents, reclaimed land	Not rated		Not rated	
BeB:				
Benevolence	Well suited		Well suited	
BeC:				
Benevolence	Well suited		Moderately suited	
			Slope	0.50
BoB:				
Bonneau	Well suited		Well suited	
BoC:				
Bonneau	Well suited		Moderately suited	
			Slope	0.50
CoB:				
Cowarts	Well suited		Well suited	
Nankin	Well suited		Well suited	
FeA:				
Faceville	Well suited		Well suited	
FeB:				
Faceville	Well suited		Well suited	
FeC:				
Faceville	Well suited		Moderately suited	
			Slope	0.50
GoA:				
Goldsboro	Well suited		Well suited	
GrA:				
Grady	Moderately suited		Poorly suited	
	Low strength	0.50	Ponding	1.00
			Wetness	1.00
			Low strength	0.50
GsA:				
Greenville	Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50
GsB:				
Greenville	Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50
GsC:				
Greenville	Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50
			Slope	0.50

Table 8c.--Forestland Management (Part 3)--Continued

Map symbol and soil name	Suitability for use of harvesting equipment: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value
GvD2:				
Greenville	Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50
	Stickiness; high plasticity index	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50
KBA:				
Kinston	Well suited		Poorly suited	
			Flooding	1.00
			Wetness	1.00
Bibb	Well suited		Poorly suited	
			Flooding	1.00
			Wetness	1.00
LmB:				
Lucy	Well suited		Well suited	
LmC:				
Lucy	Well suited		Moderately suited	
			Slope	0.50
LmD:				
Lucy	Well suited		Moderately suited	
			Slope	0.50
NcD:				
Nankin	Well suited		Moderately suited	
			Slope	0.50
Cowarts	Well suited		Moderately suited	
			Slope	0.50
NcF:				
Nankin	Moderately suited		Poorly suited	
	Slope	0.50	Slope	1.00
Cowarts	Moderately suited		Poorly suited	
	Slope	0.50	Slope	1.00
NoA:				
Norfolk	Well suited		Well suited	
NoB:				
Norfolk	Well suited		Well suited	
OBB:				
Ochlockonee	Well suited		Poorly suited	
			Flooding	1.00
Iuka	Well suited		Poorly suited	
			Flooding	1.00
Bibb	Well suited		Poorly suited	
			Flooding	1.00
			Wetness	1.00

Table 8c.--Forestland Management (Part 3)--Continued

Map symbol and soil name	Suitability for use of harvesting equipment		Suitability for log landings	
	Rating class and limiting features	Value	Rating class and limiting features	Value
OcA:				
Ocilla	Well suited		Moderately suited	
			Wetness	0.50
OeA:				
Orangeburg	Well suited		Well suited	
OeB:				
Orangeburg	Well suited		Well suited	
OgC2:				
Orangeburg	Well suited		Moderately suited	
			Slope	0.50
OgD2:				
Orangeburg	Well suited		Moderately suited	
			Slope	0.50
RaA:				
Rains	Well suited		Poorly suited	
			Wetness	1.00
			Flooding	0.50
ReA:				
Red Bay	Well suited		Well suited	
ReB:				
Red Bay	Well suited		Well suited	
RsC2:				
Red Bay	Well suited		Moderately suited	
			Slope	0.50
RsD2:				
Red Bay	Well suited		Moderately suited	
			Slope	0.50
SuC2:				
Sunsweet	Well suited		Well suited	
SuD2:				
Sunsweet	Well suited		Moderately suited	
			Slope	0.50
TfB2:				
Tifton	Well suited		Well suited	
TfC2:				
Tifton	Well suited		Moderately suited	
			Slope	0.50
TrB:				
Troup	Moderately suited		Moderately suited	
	Sandiness	0.50	Sandiness	0.50
TrD:				
Troup	Moderately suited		Moderately suited	
	Sandiness	0.50	Slope	0.50
			Sandiness	0.50

Table 9a.--Recreational Development (Part 1)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Camp areas		Picnic areas	
	Rating class and limiting features	Value	Rating class and limiting features	Value
ArC:				
Arents, reclaimed land	Not Rated		Not Rated	
BeB:				
Benevolence	Not limited		Not limited	
BeC:				
Benevolence	Not limited		Not limited	
BoB:				
Bonneau	Somewhat limited		Somewhat limited	
	Too sandy	0.91	Too sandy	0.91
BoC:				
Bonneau	Somewhat limited		Somewhat limited	
	Too sandy	0.91	Too sandy	0.91
CoB:				
Cowarts	Not limited		Not limited	
Nankin	Somewhat limited		Somewhat limited	
	Slow water movement	0.26	Slow water movement	0.26
FeA:				
Faceville	Not limited		Not limited	
FeB:				
Faceville	Not limited		Not limited	
FeC:				
Faceville	Not limited		Not limited	
GoA:				
Goldsboro	Not limited		Not limited	
GrA:				
Grady	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.96	Slow water movement	0.96
GsA:				
Greenville	Not limited		Not limited	
GsB:				
Greenville	Not limited		Not limited	
GsC:				
Greenville	Not limited		Not limited	
GvD2:				
Greenville	Very limited		Very limited	
	Too clayey	1.00	Too clayey	1.00
	Slope	0.16	Slope	0.16

Table 9a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value
KBA:				
Kinston	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.40
Bibb	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.40
LmB:				
Lucy	Somewhat limited		Somewhat limited	
	Too sandy	0.84	Too sandy	0.84
LmC:				
Lucy	Somewhat limited		Somewhat limited	
	Too sandy	0.84	Too sandy	0.84
LmD:				
Lucy	Somewhat limited		Somewhat limited	
	Slope	0.63	Slope	0.63
	Too sandy	0.84	Too sandy	0.84
NcD:				
Nankin	Somewhat limited		Somewhat limited	
	Slope	0.16	Slope	0.16
	Slow water movement	0.26	Slow water movement	0.26
Cowarts	Somewhat limited		Somewhat limited	
	Slope	0.16	Slope	0.16
NcF:				
Nankin	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Slow water movement	0.26	Slow water movement	0.26
Cowarts	Very limited		Very limited	
	Slope	1.00	Slope	1.00
NoA:				
Norfolk	Not limited		Not limited	
NoB:				
Norfolk	Not limited		Not limited	
OBB:				
Ochlockonee	Very limited		Somewhat limited	
	Flooding	1.00	Flooding	0.40
Iuka	Very limited		Somewhat limited	
	Flooding	1.00	Flooding	0.40
	Depth to saturated zone	0.39	Too sandy	0.31
	Too sandy	0.31	Depth to saturated zone	0.19
Bibb	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.40

Table 9a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value
OcA:				
Ocilla	Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.81	Too sandy	0.81
	Too sandy	0.81	Depth to saturated zone	0.48
OeA:				
Orangeburg	Not limited		Not limited	
OeB:				
Orangeburg	Not limited		Not limited	
OgC2:				
Orangeburg	Not limited		Not limited	
OgD2:				
Orangeburg	Somewhat limited		Somewhat limited	
	Slope	0.63	Slope	0.63
RaA:				
Rains	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00		
ReA:				
Red Bay	Not limited		Not limited	
ReB:				
Red Bay	Not limited		Not limited	
RsC2:				
Red Bay	Not limited		Not limited	
RsD2:				
Red Bay	Somewhat limited		Somewhat limited	
	Slope	0.63	Slope	0.63
SuC2:				
Sunsweet	Somewhat limited		Somewhat limited	
	Gravel	0.01	Gravel	0.01
	Slow water movement	0.26	Slow water movement	0.26
SuD2:				
Sunsweet	Somewhat limited		Somewhat limited	
	Gravel	0.01	Gravel	0.01
	Slow water movement	0.26	Slow water movement	0.26
	Slope	0.16	Slope	0.16
TfB2:				
Tifton	Somewhat limited		Somewhat limited	
	Slow water movement	0.26	Slow water movement	0.26
TfC2:				
Tifton	Somewhat limited		Somewhat limited	
	Slow water movement	0.26	Slow water movement	0.26
TrB:				
Troup	Very limited		Very limited	
	Too sandy	1.00	Too sandy	1.00

Table 9a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value
TrD:				
Troup	Very limited		Very limited	
	Too sandy	1.00	Too sandy	1.00
	Slope	0.16	Slope	0.16

Table 9b.--Recreational Development (Part 2)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Playgrounds: Rating class and limiting features	Playgrounds: Value	Paths and trails: Rating class and limiting features	Paths and trails: Value
ArC:				
Arents, reclaimed land	Not Rated		Not Rated	
BeB:				
Benevolence	Somewhat limited		Not limited	
	Slope	0.12		
BeC:				
Benevolence	Very limited		Not limited	
	Slope	1.00		
BoB:				
Bonneau	Somewhat limited		Somewhat limited	
	Too sandy	0.91	Too sandy	0.91
	Slope	0.12		
BoC:				
Bonneau	Very limited		Somewhat limited	
	Slope	1.00	Too sandy	0.91
	Too sandy	0.91		
CoB:				
Cowarts	Somewhat limited		Not limited	
	Slope	0.50		
Nankin	Somewhat limited		Not limited	
	Slope	0.12		
	Slow water movement	0.26		
FeA:				
Faceville	Not limited		Not limited	
FeB:				
Faceville	Somewhat limited		Not limited	
	Slope	0.50		
FeC:				
Faceville	Very limited		Not limited	
	Slope	1.00		
GoA:				
Goldsboro	Not limited		Not limited	
GrA:				
Grady	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.96		
GsA:				
Greenville	Not limited		Not limited	
GsB:				
Greenville	Somewhat limited		Not limited	
	Slope	0.50		

Table 9b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Playgrounds: Rating class and limiting features	Playgrounds: Value	Paths and trails: Rating class and limiting features	Paths and trails: Value
GsC:				
Greenville	Very limited		Not limited	
	Slope	1.00		
GvD2:				
Greenville	Very limited		Very limited	
	Slope	1.00	Too clayey	1.00
	Too clayey	1.00		
KBA:				
Kinston	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.40
Bibb	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.40
LmB:				
Lucy	Somewhat limited		Somewhat limited	
	Slope	0.12	Too sandy	0.84
	Too sandy	0.84		
LmC:				
Lucy	Very limited		Somewhat limited	
	Slope	1.00	Too sandy	0.84
	Too sandy	0.84		
LmD:				
Lucy	Very limited		Somewhat limited	
	Slope	1.00	Too sandy	0.84
	Too sandy	0.84		
NcD:				
Nankin	Very limited		Not limited	
	Slope	1.00		
	Slow water movement	0.26		
Cowarts	Very limited		Not limited	
	Slope	1.00		
NcF:				
Nankin	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Slow water movement	0.26		
Cowarts	Very limited		Very limited	
	Slope	1.00	Slope	1.00
NoA:				
Norfolk	Not limited		Not limited	
NoB:				
Norfolk	Somewhat limited		Not limited	
	Slope	0.50		
OBB:				
Ochlockonee	Very limited		Somewhat limited	
	Flooding	1.00	Flooding	0.40

Table 9b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Playgrounds: Rating class and limiting features	Playgrounds: Value	Paths and trails: Rating class and limiting features	Paths and trails: Value
OBB:				
Iuka	Very limited		Somewhat limited	
	Flooding	1.00	Flooding	0.40
	Depth to saturated zone	0.39	Too sandy	0.31
	Too sandy	0.31		
Bibb	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.40
OcA:				
Ocilla	Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.81	Too sandy	0.81
	Too sandy	0.81	Depth to saturated zone	0.11
OeA:				
Orangeburg	Not limited		Not limited	
OeB:				
Orangeburg	Somewhat limited		Not limited	
	Slope	0.50		
OgC2:				
Orangeburg	Very limited		Not limited	
	Slope	1.00		
OgD2:				
Orangeburg	Very limited		Not limited	
	Slope	1.00		
RaA:				
Rains	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	0.60		
ReA:				
Red Bay	Not limited		Not limited	
ReB:				
Red Bay	Somewhat limited		Not limited	
	Slope	0.50		
RsC2:				
Red Bay	Very limited		Not limited	
	Slope	1.00		
RsD2:				
Red Bay	Very limited		Not limited	
	Slope	1.00		
SuC2:				
Sunsweet	Very limited		Not limited	
	Gravel	1.00		
	Slope	0.88		
	Slow water movement	0.26		

Table 9b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Playgrounds: Rating class and limiting features	Value	Paths and trails: Rating class and limiting features	Value
SuD2:				
Sunsweet	Very limited		Not limited	
	Slope	1.00		
	Gravel	1.00		
	Slow water movement	0.26		
TfB2:				
Tifton	Very limited		Not limited	
	Gravel	1.00		
	Slope	0.50		
	Slow water movement	0.26		
TfC2:				
Tifton	Very limited		Not limited	
	Slope	1.00		
	Gravel	1.00		
	Slow water movement	0.26		
TrB:				
Troup	Very limited		Very limited	
	Too sandy	1.00	Too sandy	1.00
	Slope	0.12		
TrD:				
Troup	Very limited		Very limited	
	Too sandy	1.00	Too sandy	1.00
	Slope	1.00		

Table 10a.--Building Site Development (Part 1)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value
ArC:				
Arents, reclaimed land	Not rated		Not rated	
BeB:				
Benevolence	Not limited		Not limited	
BeC:				
Benevolence	Not limited		Not limited	
BoB:				
Bonneau	Not limited		Somewhat limited	
			Depth to saturated zone	0.15
BoC:				
Bonneau	Not limited		Somewhat limited	
			Depth to saturated zone	0.15
CoB:				
Cowarts	Not limited		Not limited	
Nankin	Not limited		Not limited	
FeA:				
Faceville	Not limited		Not limited	
FeB:				
Faceville	Not limited		Not limited	
FeC:				
Faceville	Not limited		Not limited	
GoA:				
Goldsboro	Not limited		Very limited	
			Depth to saturated zone	1.00
GrA:				
Grady	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50
GsA:				
Greenville	Not limited		Not limited	
GsB:				
Greenville	Not limited		Not limited	
GsC:				
Greenville	Not limited		Not limited	

Table 10a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value
GvD2:				
Greenville	Somewhat limited		Somewhat limited	
	Slope	0.16	Slope	0.16
KBA:				
Kinston	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Bibb	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
LmB:				
Lucy	Not limited		Not limited	
LmC:				
Lucy	Not limited		Not limited	
LmD:				
Lucy	Somewhat limited		Somewhat limited	
	Slope	0.63	Slope	0.63
NcD:				
Nankin	Somewhat limited		Somewhat limited	
	Slope	0.16	Slope	0.16
Cowarts	Somewhat limited		Somewhat limited	
	Slope	0.16	Slope	0.16
NcF:				
Nankin	Very limited		Very limited	
	Slope	1.00	Slope	1.00
Cowarts	Very limited		Very limited	
	Slope	1.00	Slope	1.00
NoA:				
Norfolk	Not limited		Somewhat limited	
			Depth to saturated zone	0.15
NoB:				
Norfolk	Not limited		Somewhat limited	
			Depth to saturated zone	0.15
OBB:				
Ochlockonee	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
			Depth to saturated zone	0.61
Iuka	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.39	Depth to saturated zone	1.00

Table 10a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value
OBB:				
Bibb	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
OcA:				
Ocilla	Somewhat limited		Very limited	
	Depth to saturated zone	0.81	Depth to saturated zone	1.00
OeA:				
Orangeburg	Not limited		Not limited	
OeB:				
Orangeburg	Not limited		Not limited	
OgC2:				
Orangeburg	Not limited		Not limited	
OgD2:				
Orangeburg	Somewhat limited		Somewhat limited	
	Slope	0.63	Slope	0.63
RaA:				
Rains	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
ReA:				
Red Bay	Not limited		Not limited	
ReB:				
Red Bay	Not limited		Not limited	
RsC2:				
Red Bay	Not limited		Not limited	
RsD2:				
Red Bay	Somewhat limited		Somewhat limited	
	Slope	0.63	Slope	0.63
SuC2:				
Sunsweet	Not limited		Not limited	
SuD2:				
Sunsweet	Somewhat limited		Somewhat limited	
	Slope	0.16	Slope	0.16
TfB2:				
Tifton	Not limited		Somewhat limited	
			Depth to saturated zone	0.35
TfC2:				
Tifton	Not limited		Somewhat limited	
			Depth to saturated zone	0.35

Table 10a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements	
	Rating class and limiting features	Value	Rating class and limiting features	Value
TrB:				
Troup----------------	Not limited		Not limited	
TrD:				
Troup----------------	Somewhat limited		Somewhat limited	
	Slope	0.16	Slope	0.16

Table 10b.--Building Site Development (Part 2)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Local roads and streets		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value
ArC:				
Arents, reclaimed land	Not Rated		Not rated	
BeB:				
Benevolence	Not limited		Somewhat limited	
			Unstable excavation walls	0.10
BeC:				
Benevolence	Not limited		Somewhat limited	
			Unstable excavation walls	0.10
BoB:				
Bonneau	Not limited		Very limited	
			Unstable excavation walls	1.00
			Depth to saturated zone	0.15
BoC:				
Bonneau	Not limited		Very limited	
			Unstable excavation walls	1.00
			Depth to saturated zone	0.15
CoB:				
Cowarts	Not limited		Somewhat limited	
			Unstable excavation walls	0.10
Nankin	Not limited		Somewhat limited	
			Too clayey	0.03
			Unstable excavation walls	0.10
FeA:				
Faceville	Somewhat limited		Somewhat limited	
	Low strength	0.50	Too clayey	0.12
			Unstable excavation walls	0.10
FeB:				
Faceville	Somewhat limited		Somewhat limited	
	Low strength	0.50	Too clayey	0.12
			Unstable excavation walls	0.10
FeC:				
Faceville	Somewhat limited		Somewhat limited	
	Low strength	0.50	Too clayey	0.12
			Unstable excavation walls	0.10

Table 10b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value
GoA:				
Goldsboro	Not limited		Very limited	
			Depth to saturated zone	1.00
			Unstable excavation walls	0.10
GrA:				
Grady	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Too clayey	0.88
	Low strength	0.50	Unstable excavation walls	0.10
GsA:				
Greenville	Somewhat limited		Somewhat limited	
	Low strength	0.26	Too clayey	0.12
			Unstable excavation walls	0.10
GsB:				
Greenville	Somewhat limited		Somewhat limited	
	Low strength	0.26	Too clayey	0.12
			Unstable excavation walls	0.10
GsC:				
Greenville	Somewhat limited		Somewhat limited	
	Low strength	0.26	Too clayey	0.12
			Unstable excavation walls	0.10
GvD2:				
Greenville	Somewhat limited		Somewhat limited	
	Slope	0.16	Slope	0.16
	Low strength	0.26	Too clayey	0.12
			Unstable excavation walls	0.10
KBA:				
Kinston	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Unstable excavation walls	1.00
			Flooding	0.80
Bibb	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Unstable excavation walls	1.00
			Flooding	0.80
LmB:				
Lucy	Not limited		Very limited	
			Unstable excavation walls	1.00

Table 10b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value
LmC:				
Lucy	Not limited		Very limited	
			Unstable excavation walls	1.00
LmD:				
Lucy	Somewhat limited		Very limited	
	Slope	0.63	Unstable excavation walls	1.00
			Slope	0.63
NcD:				
Nankin	Somewhat limited		Somewhat limited	
	Slope	0.16	Slope	0.16
			Too clayey	0.03
			Unstable excavation walls	0.10
Cowarts	Somewhat limited		Somewhat limited	
	Slope	0.16	Slope	0.16
			Unstable excavation walls	0.10
NcF:				
Nankin	Very limited		Very limited	
	Slope	1.00	Slope	1.00
			Too clayey	0.03
			Unstable excavation walls	0.10
Cowarts	Very limited		Very limited	
	Slope	1.00	Slope	1.00
			Unstable excavation walls	0.10
NoA:				
Norfolk	Not limited		Somewhat limited	
			Depth to saturated zone	0.15
			Unstable excavation walls	0.10
NoB:				
Norfolk	Not limited		Somewhat limited	
			Depth to saturated zone	0.15
			Unstable excavation walls	0.10
OBB:				
Ochlockonee	Very limited		Very limited	
	Flooding	1.00	Unstable excavation walls	1.00
			Flooding	0.80
			Depth to saturated zone	0.61

Table 10b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value
OBB:				
Iuka	Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	0.19	Unstable excavation walls	1.00
			Flooding	0.80
Bibb	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Unstable excavation walls	1.00
			Flooding	0.80
OcA:				
Ocilla	Somewhat limited		Very limited	
	Depth to saturated zone	0.48	Depth to saturated zone	1.00
			Unstable excavation walls	1.00
OeA:				
Orangeburg	Somewhat limited		Somewhat limited	
	Low strength	0.50	Unstable excavation walls	0.10
OeB:				
Orangeburg	Somewhat limited		Somewhat limited	
	Low strength	0.50	Unstable excavation walls	0.10
OgC2:				
Orangeburg	Somewhat limited		Somewhat limited	
	Low strength	0.50	Unstable excavation walls	0.10
OgD2:				
Orangeburg	Somewhat limited		Somewhat limited	
	Slope	0.63	Slope	0.63
			Unstable excavation walls	0.10
RaA:				
Rains	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.60
			Unstable excavation walls	0.10
ReA:				
Red Bay	Not limited		Somewhat limited	
			Unstable excavation walls	0.10
ReB:				
Red Bay	Not limited		Somewhat limited	
			Unstable excavation walls	0.10

Table 10b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Local roads and streets: Value	Shallow excavations: Rating class and limiting features	Shallow excavations: Value
RsC2:				
Red Bay	Not limited		Somewhat limited	
			Unstable excavation walls	0.10
RsD2:				
Red Bay	Somewhat limited		Somewhat limited	
	Slope	0.63	Slope	0.63
			Unstable excavation walls	0.10
SuC2:				
Sunsweet	Somewhat limited		Somewhat limited	
	Low strength	0.50	Too clayey	0.12
			Unstable excavation walls	0.10
SuD2:				
Sunsweet	Somewhat limited		Somewhat limited	
	Slope	0.16	Too clayey	0.12
	Low strength	0.50	Slope	0.16
			Unstable excavation walls	0.10
TfB2:				
Tifton	Not limited		Somewhat limited	
			Depth to saturated zone	0.35
			Unstable excavation walls	0.10
TfC2:				
Tifton	Not limited		Somewhat limited	
			Depth to saturated zone	0.35
			Unstable excavation walls	0.10
TrB:				
Troup	Not limited		Very limited	
			Unstable excavation walls	1.00
TrD:				
Troup	Somewhat limited		Very limited	
	Slope	0.16	Unstable excavation walls	1.00
			Slope	0.16

Table 11.--Sanitary Facilities

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
ArC:				
Arents, reclaimed land	Not rated		Not rated	
BeB:				
Benevolence	Not limited		Very limited	
			Seepage	1.00
			Slope	0.08
BeC:				
Benevolence	Not limited		Very limited	
			Seepage	1.00
			Slope	1.00
BoB:				
Bonneau	Somewhat limited		Very limited	
	Slow water movement	0.50	Seepage	1.00
	Depth to saturated zone	0.40	Slope	0.08
BoC:				
Bonneau	Somewhat limited		Very limited	
	Slow water movement	0.50	Seepage	1.00
	Depth to saturated zone	0.40	Slope	0.92
CoB:				
Cowarts	Very limited		Somewhat limited	
	Slow water movement	1.00	Seepage	0.50
			Slope	0.32
Nankin	Very limited		Somewhat limited	
	Slow water movement	1.00	Seepage	0.50
			Slope	0.08
FeA:				
Faceville	Somewhat limited		Somewhat limited	
	Slow water movement	0.50	Seepage	0.50
FeB:				
Faceville	Somewhat limited		Somewhat limited	
	Slow water movement	0.50	Seepage	0.50
			Slope	0.32
FeC:				
Faceville	Somewhat limited		Very limited	
	Slow water movement	0.50	Slope	1.00
			Seepage	0.50
GoA:				
Goldsboro	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.50	Seepage	0.50

Table 11.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
GrA:				
Grady	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00		
GsA:				
Greenville	Somewhat limited		Somewhat limited	
	Slow water movement	0.50	Seepage	0.50
GsB:				
Greenville	Somewhat limited		Somewhat limited	
	Slow water movement	0.50	Seepage	0.50
			Slope	0.32
GsC:				
Greenville	Somewhat limited		Very limited	
	Slow water movement	0.50	Slope	1.00
			Seepage	0.50
GvD2:				
Greenville	Somewhat limited		Very limited	
	Slow water movement	0.50	Slope	1.00
	Slope	0.16	Seepage	0.50
KBA:				
Kinston	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Depth to saturated zone	1.00
	Slow water movement	0.50		
Bibb	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.50	Seepage	0.50
LmB:				
Lucy	Somewhat limited		Very limited	
	Slow water movement	0.50	Seepage	1.00
			Slope	0.08
LmC:				
Lucy	Somewhat limited		Very limited	
	Slow water movement	0.50	Seepage	1.00
			Slope	1.00
LmD:				
Lucy	Somewhat limited		Very limited	
	Slope	0.63	Slope	1.00
	Slow water movement	0.50	Seepage	1.00
NcD:				
Nankin	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
	Slope	0.16	Seepage	0.50

Table 11.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
NcD:				
Cowarts	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
	Slope	0.16	Seepage	0.50
NcF:				
Nankin	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
	Slope	1.00	Seepage	0.50
Cowarts	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
	Slope	1.00	Seepage	0.50
NoA:				
Norfolk	Somewhat limited		Somewhat limited	
	Slow water movement	0.50	Seepage	0.50
	Depth to saturated zone	0.40		
NoB:				
Norfolk	Somewhat limited		Somewhat limited	
	Slow water movement	0.50	Seepage	0.50
	Depth to saturated zone	0.40	Slope	0.32
OBB:				
Ochlockonee	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Depth to saturated zone	0.71
	Slow water movement	0.50		
Iuka	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.50	Seepage	0.50
Bibb	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.50	Seepage	0.50
OcA:				
Ocilla	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
	Slow water movement	0.68	Depth to saturated zone	1.00
OeA:				
Orangeburg	Somewhat limited		Somewhat limited	
	Slow water movement	0.50	Seepage	0.50
OeB:				
Orangeburg	Somewhat limited		Somewhat limited	
	Slow water movement	0.50	Seepage	0.50
			Slope	0.32

Table 11.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
OgC2:				
Orangeburg----------	Somewhat limited		Very limited	
	Slow water movement	0.50	Slope	1.00
			Seepage	0.50
OgD2:				
Orangeburg----------	Somewhat limited		Very limited	
	Slope	0.63	Slope	1.00
	Slow water movement	0.50	Seepage	0.50
RaA:				
Rains---------------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.50	Seepage	0.50
ReA:				
Red Bay-------------	Somewhat limited		Very limited	
	Slow water movement	0.50	Seepage	1.00
ReB:				
Red Bay-------------	Somewhat limited		Very limited	
	Slow water movement	0.50	Seepage	1.00
			Slope	0.32
RsC2:				
Red Bay-------------	Somewhat limited		Very limited	
	Slow water movement	0.50	Slope	1.00
			Seepage	1.00
RsD2:				
Red Bay-------------	Somewhat limited		Very limited	
	Slope	0.63	Slope	1.00
	Slow water movement	0.50	Seepage	1.00
SuC2:				
Sunsweet------------	Very limited		Somewhat limited	
	Slow water movement	1.00	Slope	0.68
SuD2:				
Sunsweet------------	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
	Slope	0.16		
TfB2:				
Tifton--------------	Very limited		Somewhat limited	
	Slow water movement	1.00	Seepage	0.50
	Depth to saturated zone	0.84	Slope	0.32
TfC2:				
Tifton--------------	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
	Depth to saturated zone	0.84	Seepage	0.50

Table 11.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Septic tank absorption fields: Value	Sewage lagoons: Rating class and limiting features	Sewage lagoons: Value
TrB:				
Troup	Somewhat limited		Very limited	
	Slow water movement	0.50	Seepage	1.00
			Slope	0.08
TrD:				
Troup	Somewhat limited		Very limited	
	Slow water movement	0.50	Seepage	1.00
	Slope	0.16	Slope	1.00

Table 12.--Construction Materials

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. For potential source of sand, the ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand. For potential sources of roadfill or topsoil, the numbers in the value columns also range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Potential source of sand		Potential source of roadfill		Potential source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ArC:						
Arents, reclaimed land	Not Rated		Not rated		Not Rated	
BeB:						
Benevolence	Poor		Good		Good	
	Thickest layer	0.00				
	Bottom layer	0.00				
BeC:						
Benevolence	Poor		Good		Fair	
	Thickest layer	0.00			Too acid	0.98
	Bottom layer	0.00				
BoB:						
Bonneau	Poor		Good		Poor	
	Thickest layer	0.00			Too sandy	0.00
	Bottom layer	0.00			Too acid	0.98
BoC:						
Bonneau	Poor		Good		Poor	
	Thickest layer	0.00			Too sandy	0.00
	Bottom layer	0.00			Too acid	0.98
CoB:						
Cowarts	Poor		Good		Fair	
	Thickest layer	0.00			Too clayey	0.09
	Bottom layer	0.00			Too acid	0.98
Nankin	Poor		Good		Poor	
	Thickest layer	0.00			Too clayey	0.00
	Bottom layer	0.00			Too acid	0.88
FeA:						
Faceville	Poor		Fair		Poor	
	Thickest layer	0.00	Low strength	0.50	Too clayey	0.00
	Bottom layer	0.00			Too acid	0.88
FeB:						
Faceville	Poor		Fair		Poor	
	Thickest layer	0.00	Low strength	0.50	Too clayey	0.00
	Bottom layer	0.00			Too acid	0.88
FeC:						
Faceville	Poor		Fair		Poor	
	Thickest layer	0.00	Low strength	0.50	Too clayey	0.00
	Bottom layer	0.00			Too acid	0.88
GoA:						
Goldsboro	Poor		Fair		Fair	
	Thickest layer	0.00	Wetness	0.89	Wetness	0.89
	Bottom layer	0.00	Low strength	0.24	Too acid	0.88

Table 12.--Construction Materials--Continued

Map symbol and soil name	Potential source of sand: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
GrA:						
Grady	Poor		Poor		Poor	
	Thickest layer	0.00	Wetness	0.00	Too clayey	0.00
	Bottom layer	0.00	Low strength	0.50	Wetness	0.00
			Shrink-swell	0.87	Too acid	0.59
GsA:						
Greenville	Poor		Fair		Poor	
	Thickest layer	0.00	Low strength	0.74	Too clayey	0.00
	Bottom layer	0.00			Too acid	0.98
GsB:						
Greenville	Poor		Fair		Poor	
	Thickest layer	0.00	Low strength	0.74	Too clayey	0.00
	Bottom layer	0.00			Too acid	0.98
GsC:						
Greenville	Poor		Fair		Poor	
	Thickest layer	0.00	Low strength	0.74	Too clayey	0.00
	Bottom layer	0.00			Too acid	0.98
GvD2:						
Greenville	Poor		Fair		Poor	
	Thickest layer	0.00	Low strength	0.74	Too clayey	0.00
	Bottom layer	0.00			Slope	0.84
					Too acid	0.98
KBA:						
Kinston	Poor		Poor		Poor	
	Thickest layer	0.00	Wetness	0.00	Wetness	0.00
	Bottom layer	0.00			Too acid	0.88
Bibb	Poor		Poor		Poor	
	Thickest layer	0.00	Wetness	0.00	Wetness	0.00
	Bottom layer	0.00			Too acid	0.88
LmB:						
Lucy	Poor		Good		Fair	
	Thickest layer	0.00			Too sandy	0.14
	Bottom layer	0.00				
LmC:						
Lucy	Poor		Good		Fair	
	Thickest layer	0.00			Too sandy	0.14
	Bottom layer	0.00				
LmD:						
Lucy	Poor		Good		Fair	
	Thickest layer	0.00			Too sandy	0.14
	Bottom layer	0.00			Slope	0.37
NcD:						
Nankin	Poor		Good		Poor	
	Thickest layer	0.00			Too clayey	0.00
	Bottom layer	0.00			Slope	0.84
					Too acid	0.88
Cowarts	Poor		Good		Fair	
	Thickest layer	0.00			Too clayey	0.09
	Bottom layer	0.00			Slope	0.84
					Too acid	0.88

Table 12.--Construction Materials--Continued

Map symbol and soil name	Potential source of sand: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
NcF:						
Nankin-------------	Poor		Poor		Poor	
	Thickest layer	0.00	Slope	0.00	Slope	0.00
	Bottom layer	0.00			Too clayey	0.00
					Too acid	0.88
Cowarts------------	Poor		Poor		Poor	
	Thickest layer	0.00	Slope	0.00	Slope	0.00
	Bottom layer	0.00			Too clayey	0.09
					Too acid	0.88
NoA:						
Norfolk------------	Poor		Good		Fair	
	Thickest layer	0.00			Too acid	0.50
	Bottom layer	0.00			Too clayey	0.58
NoB:						
Norfolk------------	Poor		Good		Fair	
	Thickest layer	0.00			Too acid	0.50
	Bottom layer	0.00			Too clayey	0.58
OBB:						
Ochlockonee--------	Poor		Good		Fair	
	Thickest layer	0.00			Too acid	0.88
	Bottom layer	0.00				
Iuka---------------	Poor		Fair		Fair	
	Thickest layer	0.00	Wetness	0.53	Wetness	0.53
	Bottom layer	0.00			Too acid	0.88
Bibb---------------	Poor		Poor		Poor	
	Thickest layer	0.00	Wetness	0.00	Wetness	0.00
	Bottom layer	0.00			Too acid	0.98
OcA:						
Ocilla-------------	Poor		Fair		Fair	
	Thickest layer	0.00	Wetness	0.29	Too sandy	0.01
	Bottom layer	0.00			Wetness	0.29
					Too acid	0.88
OeA:						
Orangeburg---------	Poor		Fair		Fair	
	Thickest layer	0.00	Low strength	0.50	Too clayey	0.09
	Bottom layer	0.00			Too acid	0.98
OeB:						
Orangeburg---------	Poor		Fair		Fair	
	Thickest layer	0.00	Low strength	0.50	Too clayey	0.09
	Bottom layer	0.00			Too acid	0.98
OgC2:						
Orangeburg---------	Poor		Fair		Fair	
	Thickest layer	0.00	Low strength	0.50	Too clayey	0.09
	Bottom layer	0.00			Too acid	0.98
OgD2:						
Orangeburg---------	Poor		Good		Fair	
	Thickest layer	0.00			Too clayey	0.09
	Bottom layer	0.00			Slope	0.37
					Too acid	0.88

Table 12.--Construction Materials--Continued

Map symbol and soil name	Potential source of sand: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
RaA:						
Rains	Poor		Poor		Poor	
	Thickest layer	0.00	Wetness	0.00	Wetness	0.00
	Bottom layer	0.00			Too acid	0.59
					Too clayey	0.71
ReA:						
Red Bay	Poor		Good		Fair	
	Thickest layer	0.00			Too acid	0.98
	Bottom layer	0.00				
ReB:						
Red Bay	Poor		Good		Fair	
	Thickest layer	0.00			Too acid	0.98
	Bottom layer	0.00				
RsC2:						
Red Bay	Poor		Good		Fair	
	Thickest layer	0.00			Too acid	0.98
	Bottom layer	0.00				
RsD2:						
Red Bay	Poor		Good		Fair	
	Thickest layer	0.00			Slope	0.37
	Bottom layer	0.00			Too acid	0.98
SuC2:						
Sunsweet	Poor		Fair		Poor	
	Thickest layer	0.00	Low strength	0.50	Too clayey	0.00
	Bottom layer	0.00			Too acid	0.88
SuD2:						
Sunsweet	Poor		Fair		Poor	
	Thickest layer	0.00	Low strength	0.50	Too clayey	0.00
	Bottom layer	0.00			Slope	0.84
					Too acid	0.88
TfB2:						
Tifton	Poor		Good		Fair	
	Thickest layer	0.00			Rock fragments	0.50
	Bottom layer	0.00			Too acid	0.98
TfC2:						
Tifton	Poor		Good		Fair	
	Thickest layer	0.00			Rock fragments	0.45
	Bottom layer	0.00			Too acid	0.98
TrB:						
Troup	Fair		Good		Poor	
	Bottom layer	0.00			Too sandy	0.00
	Thickest layer	0.78			Too acid	0.88
TrD:						
Troup	Fair		Good		Poor	
	Bottom layer	0.00			Too sandy	0.00
	Thickest layer	0.78			Slope	0.84
					Too acid	0.88

Table 13.--Water Management

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees	
	Rating class and limiting features	Value	Rating class and limiting features	Value
ArC:				
Arents, reclaimed land	Not limited		Not rated	
BeB:				
Benevolence	Very limited		Not limited	
	Seepage	1.00		
BeC:				
Benevolence	Very limited		Not limited	
	Seepage	1.00		
BoB:				
Bonneau	Very limited		Not limited	
	Seepage	1.00		
BoC:				
Bonneau	Very limited		Not limited	
	Seepage	1.00		
CoB:				
Cowarts	Somewhat limited		Not limited	
	Seepage	0.57		
Nankin	Somewhat limited		Not limited	
	Seepage	0.70		
FeA:				
Faceville	Somewhat limited		Not limited	
	Seepage	0.70		
FeB:				
Faceville	Somewhat limited		Not limited	
	Seepage	0.70		
FeC:				
Faceville	Somewhat limited		Not limited	
	Seepage	0.70		
GoA:				
Goldsboro	Somewhat limited		Somewhat limited	
	Seepage	0.70	Depth to saturated zone	0.86
GrA:				
Grady	Not limited		Very limited	
			Depth to saturated zone	1.00
			Hard to pack	0.99
GsA:				
Greenville	Somewhat limited		Somewhat limited	
	Seepage	0.70	Hard to pack	0.53

Table 13.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value
GsB:				
Greenville	Somewhat limited		Somewhat limited	
	Seepage	0.70	Hard to pack	0.53
GsC:				
Greenville	Somewhat limited		Somewhat limited	
	Seepage	0.70	Hard to pack	0.53
GvD2:				
Greenville	Somewhat limited		Somewhat limited	
	Seepage	0.70	Hard to pack	0.68
KBA:				
Kinston	Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00
Bibb	Somewhat limited		Very limited	
	Seepage	0.70	Depth to saturated zone	1.00
			Piping	1.00
LmB:				
Lucy	Very limited		Not limited	
	Seepage	1.00		
LmC:				
Lucy	Very limited		Not limited	
	Seepage	1.00		
LmD:				
Lucy	Very limited		Not limited	
	Seepage	1.00		
	Slope	0.04		
NcD:				
Nankin	Somewhat limited		Not limited	
	Seepage	0.70		
Cowarts	Somewhat limited		Not limited	
	Seepage	0.57		
NcF:				
Nankin	Very limited		Not limited	
	Slope	1.00		
	Seepage	0.70		
Cowarts	Very limited		Not limited	
	Slope	1.00		
	Seepage	0.57		
NoA:				
Norfolk	Somewhat limited		Not limited	
	Seepage	0.70		
NoB:				
Norfolk	Somewhat limited		Not limited	
	Seepage	0.70		

Table 13.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees	
	Rating class and limiting features	Value	Rating class and limiting features	Value
OBB:				
Ochlockonee	Very limited		Very limited	
	Seepage	1.00	Piping	1.00
Iuka	Somewhat limited		Very limited	
	Seepage	0.70	Depth to saturated zone	1.00
Bibb	Somewhat limited		Very limited	
	Seepage	0.70	Depth to saturated zone	1.00
			Piping	1.00
OcA:				
Ocilla	Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00
OeA:				
Orangeburg	Somewhat limited		Not limited	
	Seepage	0.70		
OeB:				
Orangeburg	Somewhat limited		Not limited	
	Seepage	0.70		
OgC2:				
Orangeburg	Somewhat limited		Not limited	
	Seepage	0.70		
OgD2:				
Orangeburg	Somewhat limited		Not limited	
	Seepage	0.70		
	Slope	0.04		
RaA:				
Rains	Somewhat limited		Very limited	
	Seepage	0.70	Depth to saturated zone	1.00
ReA:				
Red Bay	Very limited		Not limited	
	Seepage	1.00		
ReB:				
Red Bay	Very limited		Not limited	
	Seepage	1.00		
RsC2:				
Red Bay	Very limited		Not limited	
	Seepage	1.00		
RsD2:				
Red Bay	Very limited		Not limited	
	Seepage	1.00		
	Slope	0.04		
SuC2:				
Sunsweet	Somewhat limited		Somewhat limited	
	Seepage	0.03	Piping	0.40

Table 13.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees	
	Rating class and limiting features	Value	Rating class and limiting features	Value
SuD2:				
Sunsweet	Somewhat limited		Somewhat limited	
	Seepage	0.03	Piping	0.40
TfB2:				
Tifton	Somewhat limited		Not limited	
	Seepage	0.70		
TfC2:				
Tifton	Somewhat limited		Not limited	
	Seepage	0.70		
TrB:				
Troup	Very limited		Very limited	
	Seepage	1.00	Seepage	1.00
TrD:				
Troup	Very limited		Very limited	
	Seepage	1.00	Seepage	1.00

Table 14.--Engineering Properties

[Absence of an entry indicates that the data were not estimated]

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas sieve number		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				*Pct*	*Pct*			
ArC:									
Arents, reclaimed land.									
BeB:									
Benevolence-----	0-12	Loamy sand	SC-SM	A-4	0	0	90-100	85-100	70-85
	12-37	Sandy loam, fine sandy loam	SC, SC-SM, CL-ML	A-4	0	0	90-100	85-100	60-85
	37-47	Sandy loam, fine sandy loam	SC, SC-SM, CL-ML	A-4	0	0	90-100	85-100	60-85
	47-80	Sandy clay loam, sandy loam	SC, SC-SM	A-6	0	0	90-100	85-100	60-85
BeC:									
Benevolence-----	0-12	Loamy sand	SC-SM	A-4	0	0	90-100	85-100	70-85
	12-37	Sandy loam, fine sandy loam	SC, SC-SM, CL-ML	A-4	0	0	90-100	85-100	60-85
	37-47	Sandy loam, fine sandy loam	SC, SC-SM, CL-ML	A-4	0	0	90-100	85-100	60-85
	47-80	Sandy clay loam, sandy loam	SC, SC-SM	A-6	0	0	90-100	85-100	60-85
BoB:									
Bonneau---------	0-6	Loamy sand	SC-SM, SC, SM	A-2, A-2-4	0	0	100	100	50-95
	6-33	Loamy sand	SC-SM, SM	A-2	0	0	100	100	50-95
	33-65	Sandy loam, sandy clay loam, fine sandy loam	SC, SC-SM	A-6, A-4, A-2	0	0	100	100	60-10
	65-80	Sandy clay, sandy loam, sandy clay loam	SC, SC-SM, CL	A-7, A-2, A-6	0	0	100	100	60-95
BoC:									
Bonneau---------	0-6	Loamy sand	SC-SM, SC, SM	A-2, A-2-4	0	0	100	100	50-95
	6-33	Loamy sand	SC-SM, SM	A-2	0	0	100	100	50-95
	33-65	Sandy loam, sandy clay loam, fine sandy loam	SC, SC-SM	A-6, A-4, A-2	0	0	100	100	60-10
	65-80	Sandy clay, sandy loam, sandy clay loam	SC, SC-SM, CL	A-7, A-2, A-6	0	0	100	100	60-95

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage pas sieve number: 4	10	40
	In				*Pct*	*Pct*			
CoB:									
Cowarts----------	0-7	Loamy sand	SM	A-2-4, A-2	0	0	90-100	85-100	50-80
	7-15	Sandy loam, fine sandy loam, sandy clay loam	SC, SC-SM	A-2, A-6, A-4	0	0	95-100	90-100	60-95
	15-40	Sandy clay loam, sandy clay, clay loam	SC	A-6, A-7, A-2-6	0	0	95-100	90-100	60-95
	40-80	Sandy loam, loamy sand, sandy clay loam, clay loam	SC, SC-SM, CL	A-6, A-7, A-2	0	0	85-100	80-100	60-95
Nankin----------	0-4	Loamy sand	SC-SM, SP-SM, SM	A-2-4, A-2	0	0	85-100	85-100	50-85
	4-16	Sandy clay loam, sandy loam	SC, SC-SM	A-2, A-6, A-4	0	0	97-100	95-100	75-90
	16-44	Sandy clay, sandy clay loam, clay	CL, SC	A-7	0	0	98-100	95-100	75-95
	44-80	Sandy clay loam, sandy loam	SC, SC-SM, CL	A-6, A-2, A-4	0	0	98-100	95-100	70-85
FeA:									
Faceville--------	0-10	Sandy loam	SC, SM	A-2-4, A-4, A-2	0	0	90-100	85-100	72-97
	10-80	Sandy clay, clay, clay loam	CH, SC, CL	A-7	0	0	98-100	95-100	75-99
FeB:									
Faceville--------	0-10	Sandy loam	SC, SM	A-2-4, A-4, A-2	0	0	90-100	85-100	72-97
	10-80	Sandy clay, clay, clay loam	CH, SC, CL	A-7	0	0	98-100	95-100	75-99
FeC:									
Faceville--------	0-10	Sandy loam	SC, SM	A-2-4, A-4, A-2	0	0	90-100	85-100	72-97
	10-80	Sandy clay, clay, clay loam	CH, SC, CL	A-7	0	0	98-100	95-100	75-99
GoA:									
Goldsboro--------	0-10	Loamy sand	SM	A-2-4, A-2	0	0	95-100	95-100	50-95
	10-33	Sandy clay loam, sandy loam	SC, SC-SM, CL	A-6, A-2	0	0	98-100	95-100	60-10
	33-80	Sandy clay loam, clay loam	CL, SC	A-6, A-7-6	0	0	95-100	90-100	65-95

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage pas[sing] sieve number[--]: 4	10	40
	In				Pct	Pct			
GrA:									
Grady-----------	0-5	Clay loam	CL	A-7, A-6	0	0	100	99-100	85-10
	5-65	Clay, sandy clay	CH	A-7	0	0	100	100	90-10
GsA:									
Greenville------	0-8	Sandy clay loam	CL, SC-SM, SC	A-6, A-4	0	0	95-100	95-100	75-95
	8-80	Sandy clay, clay loam, clay	CH, SC, CL	A-7	0	0	98-100	95-100	80-99
GsB:									
Greenville------	0-8	Sandy clay loam	CL, SC-SM, SC	A-6, A-4	0	0	95-100	95-100	75-95
	8-80	Sandy clay, clay loam, clay	CH, SC, CL	A-7	0	0	98-100	95-100	80-99
GsC:									
Greenville------	0-8	Sandy clay loam	CL, SC-SM, SC	A-6, A-4	0	0	95-100	95-100	75-95
	8-80	Sandy clay, clay loam, clay	CH, SC, CL	A-7	0	0	98-100	95-100	80-99
GvD2:									
Greenville------	0-8	Sandy clay, clay loam, clay	CH, SC, CL	A-7	0	0	98-100	95-100	80-99
	8-80	Sandy clay, clay loam, clay	CH, SC, CL	A-7	0	0	98-100	95-100	80-99
KBA:									
Kinston---------	0-3	Loam, silt loam	SM	A-2, A-6, A-4	0	0	100	98-100	55-10
	3-8	Silt loam, loam	SC	A-2, A-6, A-4	0	0	100	98-100	55-10
	8-15	Clay loam	SC	A-2	0	0	100	98-100	55-10
	15-33	Sandy loam	SC	A-2	0	0	100	98-100	55-10
	33-52	Sandy clay loam	CL	A-6, A-7	0	0	100	95-100	75-10
	52-80	Loamy sand, fine sand, sand	SM, SP-SM, SP	A-2, A-3	0	0	90-100	85-100	51-90

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage pas(sing) sieve number(r): 4	10	40
	In				Pct	Pct			
KBA:									
Bibb	0-5	Fine sandy loam	SC-SM, SM, SC, CL-ML, ML	A-4, A-2	0	0-5	95-100	90-100	60-90
	5-27	Sandy loam, silt loam, loam	CL-ML, SM, SC-SM, ML	A-4, A-2	0	0-10	60-100	50-100	40-10
	27-45	Sandy loam	SC-SM, SM, ML, CL-ML	A-4, A-2	0	0-5	95-100	90-100	60-90
	45-80	Stratified sand to loamy sand to sandy loam	CL-ML, SM, SC-SM, ML	A-4, A-2	0	0-10	60-100	50-100	40-10
LmB:									
Lucy	0-8	Loamy sand	SM, SP-SM	A-2-4, A-4, A-2	0	0	98-100	95-100	50-90
	8-24	Loamy sand	SM, SP-SM	A-2, A-4	0	0	98-100	95-100	50-90
	24-48	Sandy loam, fine sandy loam, sandy clay loam	SC, SC-SM	A-2, A-6, A-4	0	0	97-100	95-100	55-95
	48-72	Sandy clay loam, clay loam, sandy clay	SC, SC-SM	A-2, A-6	0	0	100	95-100	60-95
LmC:									
Lucy	0-8	Loamy sand	SM, SP-SM	A-2-4, A-4, A-2	0	0	98-100	95-100	50-90
	8-24	Loamy sand	SM, SP-SM	A-2, A-4	0	0	98-100	95-100	50-90
	24-48	Sandy loam, fine sandy loam, sandy clay loam	SC, SC-SM	A-2, A-6, A-4	0	0	97-100	95-100	55-95
	48-72	Sandy clay loam, clay loam, sandy clay	SC, SC-SM	A-2, A-6	0	0	100	95-100	60-95
LmD:									
Lucy	0-8	Loamy sand	SM, SP-SM	A-2-4, A-4, A-2	0	0	98-100	95-100	50-90
	8-24	Loamy sand	SM, SP-SM	A-2, A-4	0	0	98-100	95-100	50-90
	24-48	Sandy loam, fine sandy loam, sandy clay loam	SC, SC-SM	A-2, A-6, A-4	0	0	97-100	95-100	55-95
	48-72	Sandy clay loam, clay loam, sandy clay	SC, SC-SM	A-2, A-6	0	0	100	95-100	60-95

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40
	In				Pct	Pct			
NcD:									
Nankin----------	0-4	Loamy sand	SC-SM, SP-SM, SM	A-2-4, A-2	0	0	85-100	85-100	50-85
	4-16	Sandy clay loam, sandy loam	SC, SC-SM	A-2, A-6, A-4	0	0	97-100	95-100	75-90
	16-44	Sandy clay, sandy clay loam, clay	CL, SC	A-7	0	0	98-100	95-100	75-95
	44-80	Sandy loam, sandy clay loam	SC, SC-SM, CL	A-6, A-2, A-4	0	0	98-100	95-100	70-85
Cowarts---------	0-7	Loamy sand	SM	A-2-4, A-2	0	0	90-100	85-100	50-80
	7-15	Sandy loam, fine sandy loam, sandy clay loam	SC, SC-SM	A-2, A-6, A-4	0	0	95-100	90-100	60-95
	15-40	Sandy clay loam, sandy clay, clay loam	SC	A-6, A-7, A-2-6	0	0	95-100	90-100	60-95
	40-80	Sandy loam, sandy clay loam, sandy loam	SC, SC-SM, CL	A-6, A-7, A-2	0	0	85-100	80-100	60-95
NcF:									
Nankin----------	0-4	Loamy sand	SC-SM, SP-SM, SM	A-2-4, A-2	0	0	85-100	85-100	50-85
	4-16	Sandy clay loam, sandy loam	SC, SC-SM	A-2, A-6, A-4	0	0	97-100	95-100	75-90
	16-44	Sandy clay, sandy clay loam, clay	CL, SC	A-7	0	0	98-100	95-100	75-95
	44-80	Sandy loam, sandy clay loam	SC, SC-SM, CL	A-6, A-2, A-4	0	0	98-100	95-100	70-85
Cowarts---------	0-7	Loamy sand	SM	A-2-4, A-2	0	0	90-100	85-100	50-80
	7-15	Sandy loam, fine sandy loam, sandy clay loam	SC, SC-SM	A-2, A-6, A-4	0	0	95-100	90-100	60-95
	15-40	Sandy clay loam, sandy clay, clay loam	SC	A-6, A-7, A-2-6	0	0	95-100	90-100	60-95
	40-80	Sandy loam, sandy clay loam, loamy sand	SC, SC-SM, CL	A-6, A-7, A-2	0	0	85-100	80-100	60-95
NoA:									
Norfolk---------	0-6	Loamy sand	SM	A-2-4, A-2	0	0	95-100	92-100	50-95
	6-30	Sandy clay loam, sandy loam	SC, SC-SM, CL	A-6, A-2	0	0	95-100	91-100	70-96
	30-70	Sandy clay loam, clay loam, sandy clay	CL, SC-SM, SC	A-6, A-7-6	0	0	100	98-100	65-98
	70-80	Sandy loam		A-6	0	0	95-100	90-100	50-90

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas sieve number		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				*Pct*	*Pct*			
NoB:									
Norfolk---------	0-6	Loamy sand	SM	A-2-4, A-2	0	0	95-100	92-100	50-95
	6-30	Sandy clay loam, sandy loam	SC, SC-SM, CL	A-6, A-2	0	0	95-100	91-100	70-96
	30-70	Sandy clay loam, clay loam, sandy clay	CL, SC-SM, SC	A-6, A-7-6	0	0	100	98-100	65-98
	70-80	Sandy loam		A-6	0	0	95-100	90-100	50-90
OBB:									
Ochlockonee-----	0-4	Loamy fine sand	SM, CL-ML, SC-SM, ML	A-2, A-4	0	0	100	95-100	50-75
	4-32	Sandy loam	ML, SM, SC-SM, CL-ML	A-4, A-2	0	0	100	95-100	65-90
	32-62	Fine sandy loam, sandy loam, silt loam	CL-ML, SC, SM, CL, ML	A-4	0	0	100	95-100	95-10
	62-80	Loamy sand, loamy fine sand, sandy loam, silt loam	SC-SM, SC, SM, CL, ML	A-4, A-2	0	0	100	95-100	85-99
Iuka------------	0-3	Loamy sand, loamy fine sand	SM	A-2	0	0	100	95-100	50-75
	3-20	Stratified fine sand to fine sandy loam, loam, sandy loam	ML, SM, SC-SM, CL-ML	A-4	0	0	95-100	85-100	65-10
	20-34	Fine sandy loam, loam, sandy loam	ML, SM, SC-SM, CL-ML	A-4	0	0	95-100	85-100	65-10
	34-80	Fine sandy loam, loam	SM, ML	A-4, A-2	0	0	95-100	90-100	70-10
Bibb------------	0-5	Fine sandy loam	SC-SM, SM, SC, CL-ML, ML	A-4, A-2	0	0-5	95-100	90-100	60-90
	5-27	Sandy loam, silt loam, loam	CL-ML, SM, SC-SM, ML	A-4, A-2	0	0-10	60-100	50-100	40-10
	27-45	Sandy loam	SC-SM, SM, ML, CL-ML	A-4, A-2	0	0-5	95-100	90-100	60-90
	45-80	Stratified sand to loamy sand to sandy loam	CL-ML, SM, SC-SM, ML	A-4, A-2	0	0-10	60-100	50-100	40-10

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage pas[sing] sieve number[--]: 4	10	40
	In				Pct	Pct			
OcA:									
Ocilla----------	0-10	Loamy sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	75-10
	10-24	Loamy sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	75-10
	24-32	Sandy clay loam, sandy loam, fine sandy loam	SC, SM, ML, CL	A-4, A-6, A-2	0	0	100	95-100	80-10
	32-58	Sandy clay loam, sandy loam, fine sandy loam	SC, SM, ML, CL	A-4, A-6, A-2	0	0	100	95-100	80-10
	58-72	Sandy clay loam, sandy clay, sandy loam	SC, CL	A-6, A-7, A-4	0	0	100	95-100	80-10
OeA:									
Orangeburg------	0-7	Loamy sand	SC-SM, SM	A-2-4, A-2	0	0	98-100	95-100	60-87
	7-12	Sandy loam	SC, SM	A-2	0	0	98-100	95-100	70-96
	12-22	Sandy clay loam, sandy loam	SC, SC-SM, CL	A-6	0	0	98-100	95-100	71-96
	22-80	Sandy clay loam, sandy clay	CL, SC	A-7, A-6	0	0	98-100	95-100	70-97
OeB:									
Orangeburg------	0-7	Loamy sand	SC-SM, SM	A-2-4, A-2	0	0	98-100	95-100	60-87
	7-12	Sandy loam	SC, SM	A-2	0	0	98-100	95-100	70-96
	12-22	Sandy clay loam, sandy loam	SC, SC-SM, CL	A-6	0	0	98-100	95-100	71-96
	22-80	Sandy clay loam, sandy clay	CL, SC	A-7, A-6	0	0	98-100	95-100	70-97
OgC2:									
Orangeburg------	0-5	Sandy loam	SC, SM	A-2	0	0	98-100	95-100	70-96
	5-12	Sandy loam	SC, SM	A-2	0	0	98-100	95-100	70-96
	12-22	Sandy clay loam, sandy loam	SC, SC-SM, CL	A-6	0	0	98-100	95-100	71-96
	22-80	Sandy clay loam, sandy clay	CL, SC	A-7, A-6	0	0	98-100	95-100	70-97
OgD2:									
Orangeburg------	0-5	Sandy loam	SC, SM	A-2	0	0	98-100	95-100	70-96
	5-12	Sandy loam	SC, SM	A-2	0	0	98-100	95-100	70-96
	12-22	Sandy clay loam, sandy loam	SC, SC-SM, CL	A-6	0	0	98-100	95-100	71-96
	22-80	Sandy clay loam, sandy clay	CL, SC	A-7, A-6	0	0	98-100	95-100	70-97

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage pas[sing] sieve number[--]: 4	10	40
	In				Pct	Pct			
RaA:									
Rains-----------	0-8	Sandy loam	SC-SM, SM, ML	A-4, A-2	0	0	100	95-100	50-85
	8-26	Sandy clay loam, fine sandy loam, sandy loam	SC, SC-SM, CL	A-6, A-2	0	0	100	95-100	55-98
	26-52	Sandy clay loam, clay loam, sandy clay	CL, SC-SM, SC	A-6, A-7	0	0	100	98-100	60-98
	52-72	Sandy clay loam, sandy loam, sandy clay	SC, SM, ML, CL	A-4, A-6, A-2	0	0	100	95-100	60-95
ReA:									
Red Bay---------	0-8	Loamy sand	SC-SM, SM	A-2-4, A-2	0	0	100	90-100	51-75
	8-40	Sandy loam, sandy clay loam	SC, SC-SM	A-2, A-4	0	0	100	95-100	60-85
	40-80	Sandy clay loam	SC, SC-SM	A-6, A-2	0	0	100	95-100	70-90
ReB:									
Red Bay---------	0-8	Loamy sand	SC-SM, SM	A-2-4, A-2	0	0	100	90-100	51-75
	8-40	Sandy loam, sandy clay loam	SC, SC-SM	A-2, A-4	0	0	100	95-100	60-85
	40-80	Sandy clay loam	SC, SC-SM	A-6, A-2	0	0	100	95-100	70-90
RsC2:									
Red Bay---------	0-5	Sandy loam	SC, SM	A-2	0	0	98-100	95-100	70-96
	5-40	Sandy loam, sandy clay loam	SC, SC-SM	A-2, A-4	0	0	100	95-100	60-85
	40-80	Sandy clay loam	SC, SC-SM	A-6, A-2	0	0	100	95-100	70-90
RsD2:									
Red Bay---------	0-5	Sandy loam	SC, SM	A-2	0	0	98-100	95-100	70-96
	5-40	Sandy loam, sandy clay loam	SC, SC-SM	A-2, A-4	0	0	100	95-100	60-85
	40-80	Sandy clay loam	SC, SC-SM	A-6, A-2	0	0	100	95-100	70-90
SuC2:									
Sunsweet--------	0-4	Gravelly sandy loam, sandy loam	SM	A-2, A-1-b	0	0	80-100	55-92	45-90
	4-20	Sandy clay, clay, sandy clay loam	CL, SC	A-6, A-7, A-4	0	0	95-100	90-100	80-97
	20-60	Sandy clay, clay	CL	A-7, A-6	0	0	95-100	92-100	90-99

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage pas sieve number: 4	10	40
	In				Pct	Pct			
SuD2:									
Sunsweet--------	0-4	Gravelly sandy loam, sandy loam	SM	A-2, A-1-b	0	0	80-100	55-92	45-90
	4-20	Sandy clay, clay, sandy clay loam	CL, SC	A-6, A-7, A-4	0	0	95-100	90-100	80-97
	20-60	Sandy clay, clay	CL	A-7, A-6	0	0	95-100	92-100	90-99
TfB2:									
Tifton----------	0-5	Sandy loam	SM, SC-SM	A-2	0	0	70-95	60-89	55-89
	5-9	Sandy loam, gravelly sandy loam, fine sandy loam	SM, SC-SM	A-2	0	0	70-95	56-89	55-89
	9-32	Sandy loam, sandy clay loam, gravelly sandy clay loam	SC, CL	A-6, A-4, A-2	0	0	77-98	52-98	38-79
	32-42	Sandy clay loam, sandy clay	SC, CL	A-6, A-7, A-4, A-2	0	0	87-100	80-99	50-94
	42-80	Sandy clay loam, sandy clay	SC, CL	A-6, A-7, A-4	0	0	80-98	75-98	50-94
TfC2:									
Tifton----------	0-5	Sandy loam	SM, SC-SM	A-2	0	0	70-95	60-89	55-89
	5-9	Sandy loam, gravelly sandy loam, fine sandy loam	SM, SC-SM	A-2	0	0	70-95	56-89	55-89
	9-32	Sandy loam, gravelly sandy clay loam Sandy clay loam, gravelly sandy clay loam	SC, CL	A-6, A-4, A-2	0	0	70-98	65-94	60-89
	32-42	Sandy clay loam, sandy clay	SC, CL	A-6, A-7, A-4, A-2	0	0	87-100	80-99	50-94
	42-80	Sandy clay loam, sandy clay	SC, CL	A-6, A-7, A-4	0	0	80-98	75-98	50-94
TrB:									
Troup-----------	0-9	Loamy sand, sand	SM, SP-SM	A-2-4, A-2	0	0	95-100	85-100	63-80
	9-60	Sand, loamy sand	SM, SP-SM	A-2	0	0	95-100	90-100	60-10
	60-80	Sandy loam, sandy clay loam, fine sandy loam	SC, SC-SM, CL-ML, CL	A-6, A-4, A-2	0	0	95-100	90-100	60-90

Table 14.--Engineering Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas sieve number		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				*Pct*	*Pct*			
TrD:									
Troup-----------	0-9	Loamy sand, sand	SM, SP-SM	A-2-4, A-2	0	0	95-100	85-100	63-80
	9-60	Sand, loamy sand	SM, SP-SM	A-2	0	0	95-100	85-100	63-80
	60-80	Sandy loam, sandy clay loam, fine sandy loam	SC, SC-SM, CL-ML, CL	A-6, A-4, A-2	0	0	95-100	90-100	60-90

Table 15.--Risk of Corrosion

[See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated]

Map symbol and soil name	Risk of corrosion	
	Uncoated steel	Concrete
ArC:		
Arents, reclaimed land	High	---
BeB:		
Benevolence	Low	Moderate
BeC:		
Benevolence	Low	Moderate
BoB:		
Bonneau	Moderate	Moderate
BoC:		
Bonneau	Moderate	Moderate
CoB:		
Cowarts	Moderate	Moderate
Nankin	Moderate	Moderate
FeA:		
Faceville	Moderate	Moderate
FeB:		
Faceville	Moderate	Moderate
FeC:		
Faceville	Moderate	Moderate
GoA:		
Goldsboro	High	Moderate
GrA:		
Grady	High	High
GsA:		
Greenville	Moderate	Moderate
GsB:		
Greenville	Moderate	Moderate
GsC:		
Greenville	Moderate	Moderate
GvD2:		
Greenville	Moderate	Moderate
KBA:		
Kinston	High	Moderate
Bibb	High	High
LmB:		
Lucy	Moderate	Moderate
LmC:		
Lucy	Moderate	Moderate

Table 15.--Risk of Corrosion--Continued

Map symbol and soil name	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
LmD:		
Lucy	Moderate	Moderate
NcD:		
Nankin	Moderate	Moderate
Cowarts	Moderate	Moderate
NcF:		
Nankin	Moderate	Moderate
Cowarts	Moderate	Moderate
NoA:		
Norfolk	Moderate	High
NoB:		
Norfolk	Moderate	High
OBB:		
Ochlockonee	Moderate	High
Iuka	High	High
Bibb	High	High
OcA:		
Ocilla	High	Moderate
OeA:		
Orangeburg	Moderate	Moderate
OeB:		
Orangeburg	Moderate	Moderate
OgC2:		
Orangeburg	Moderate	Moderate
OgD2:		
Orangeburg	Moderate	Moderate
RaA:		
Rains	High	High
ReA:		
Red Bay	Moderate	Moderate
ReB:		
Red Bay	Moderate	Moderate
RsC2:		
Red Bay	Moderate	Moderate
RsD2:		
Red Bay	Moderate	Moderate
SuC2:		
Sunsweet	Moderate	Moderate
SuD2:		
Sunsweet	Moderate	Moderate

Table 15.--Risk of Corrosion--Continued

Map symbol and soil name	Risk of corrosion	
	Uncoated steel	Concrete
TfB2:		
Tifton	Moderate	Moderate
TfC2:		
Tifton	Moderate	Moderate
TrB:		
Troup	Moderate	High
TrD:		
Troup	Moderate	High
W:		
Water	High	---

Table 16.--Water Features

[Depths of layers are in feet. See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated]

Map symbol and soil name	Hydrologic group	Months	Water table: Upper limit	Water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft		*Ft*				
ArC:									
Arents, reclaimed land	---								
		Jan-Dec	---	---	---	---	---	---	None
BeB:									
Benevolence	B								
		Jan-Dec	---	---	---	---	---	---	None
BeC:									
Benevolence	B								
		Jan-Dec	---	---	---	---	---	---	None
BoB:									
Bonneau	A								
		Jan-Mar	4.0-6.0	Apparent	---	---	---	---	None
		Apr-Nov	---	---	---	---	---	---	None
		Dec	4.0-6.0	Apparent	---	---	---	---	None
BoC:									
Bonneau	A								
		Jan-Mar	4.0-6.0	Apparent	---	---	---	---	None
		Apr-Nov	---	---	---	---	---	---	None
		Dec	4.0-6.0	Apparent	---	---	---	---	None
CoB:									
Cowarts	C								
		Jan-Dec	---	---	---	---	---	---	None
Nankin	C								
		Jan-Dec	---	---	---	---	---	---	None
FeA:									
Faceville	B								
		Jan-Dec	---	---	---	---	---	---	None
FeB:									
Faceville	B								
		Jan-Dec	---	---	---	---	---	---	None
FeC:									
Faceville	B								
		Jan-Dec	---	---	---	---	---	---	None
GoA:									
Goldsboro	B								
		Jan-Mar	2.0-3.0	Apparent	---	---	---	---	None
		Apr-Nov	---	---	---	---	---	---	None
		Dec	2.0-3.0	Apparent	---	---	---	---	None
GrA:									
Grady	D								
		Jan-Jun	0.0-1.0	Apparent	0.0-2.0	Long	Frequent	---	None
		Jul-Nov	---	---	---	---	---	---	None
		Dec	0.0-1.0	Apparent	0.0-2.0	Long	Frequent	---	None

Table 16.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft		Ft				
GsA:									
Greenville------	B								
		Jan-Dec	---	---	---	---	---	---	None
GsB:									
Greenville------	B								
		Jan-Dec	---	---	---	---	---	---	None
GsC:									
Greenville------	B								
		Jan-Dec	---	---	---	---	---	---	None
GvD2:									
Greenville------	B								
		Jan-Dec	---	---	---	---	---	---	None
KBA:									
Kinston---------	B/D								
		Jan-May	0.0-1.0	Apparent	---	---	---	Long	Frequent
		Jul-Oct	---	---	---	---	---	---	---
		Dec	0.0-1.0	Apparent	---	---	---	Long	Frequent
Bibb------------	D								
		Jan-Apr	0.5-1.0	Apparent	---	---	---	Long	Frequent
		May	---	---	---	---	---	Long	Frequent
		Jul-Oct	---	---	---	---	---	---	---
		Dec	0.5-1.0	Apparent	---	---	---	Long	Frequent
LmB:									
Lucy------------	A								
		Jan-Dec	---	---	---	---	---	---	None
LmC:									
Lucy------------	A								
		Jan-Dec	---	---	---	---	---	---	None
LmD:									
Lucy------------	A								
		Jan-Dec	---	---	---	---	---	---	None
NcD:									
Nankin----------	C								
		Jan-Dec	---	---	---	---	---	---	None
Cowarts---------	C								
		Jan-Dec	---	---	---	---	---	---	None
NcF:									
Nankin----------	C								
		Jan-Dec	---	---	---	---	---	---	None
Cowarts---------	C								
		Jan-Dec	---	---	---	---	---	---	None
NoA:									
Norfolk---------	B								
		Jan-Mar	4.0-6.0	Apparent	---	---	---	---	None
		Apr-Dec	---	---	---	---	---	---	None

Table 16.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft		*Ft*				
NoB:									
Norfolk----------	B								
		Jan-Mar	4.0-6.0	Apparent	---	---	---	---	None
		Apr-Dec	---	---	---	---	---	---	None
OBB:									
Ochlockonee------	B								
		Jan-Apr	3.0-5.0	Apparent	---	---	---	Very brief	Frequent
		May-Nov	---	---	---	---	---	---	---
		Dec	3.0-5.0	Apparent	---	---	---	Very brief	Frequent
Iuka-------------	C								
		Jan-Apr	1.0-3.0	Apparent	---	---	---	Brief	Frequent
		May-Nov	---	---	---	---	---	---	---
		Dec	1.0-3.0	Apparent	---	---	---	Brief	Frequent
Bibb-------------	D								
		Jan-Apr	0.5-1.0	Apparent	---	---	---	Long	Frequent
		May	---	---	---	---	---	Long	Frequent
		Jun-Nov	---	---	---	---	---	---	---
		Dec	0.5-1.0	Apparent	---	---	---	Long	Frequent
OcA:									
Ocilla-----------	C								
		Jan-Mar	1.0-2.5	Apparent	---	---	---	---	None
		Apr-Nov	---	---	---	---	---	---	None
		Dec	1.0-2.5	Apparent	---	---	---	---	None
OeA:									
Orangeburg-------	B								
		Jan-Dec	---	---	---	---	---	---	None
OeB:									
Orangeburg-------	B								
		Jan-Dec	---	---	---	---	---	---	None
OgC2:									
Orangeburg-------	B								
		Jan-Dec	---	---	---	---	---	---	None
OgD2:									
Orangeburg-------	B								
		Jan-Dec	---	---	---	---	---	---	None
RaA:									
Rains------------	B/D								
		Jan-Mar	0.0-1.0	Apparent	---	---	---	---	Occasional
		Apr	0.0-1.0	Apparent	---	---	---	---	---
		May-Oct	---	---	---	---	---	---	---
		Nov	0.0-1.0	Apparent	---	---	---	---	---
		Dec	0.0-1.0	Apparent	---	---	---	---	Occasional
ReA:									
Red Bay----------	B								
		Jan-Dec	---	---	---	---	---	---	None
ReB:									
Red Bay----------	B								
		Jan-Dec	---	---	---	---	---	---	None

Table 16.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft		*Ft*				
RsC2:									
Red Bay	B								
		Jan-Dec	---	---	---	---	---	---	None
RsD2:									
Red Bay	B								
		Jan-Dec	---	---	---	---	---	---	None
SuC2:									
Sunsweet	C								
		Jan-Dec	---	---	---	---	---	---	None
SuD2:									
Sunsweet	C								
		Jan-Dec	---	---	---	---	---	---	None
TfB2:									
Tifton	B								
		Jan-Mar	3.5-6.0	Perched	---	---	---	---	None
		Apr-Dec	---	---	---	---	---	---	None
TfC2:									
Tifton	B								
		Jan-Mar	3.5-6.0	Perched	---	---	---	---	None
		Apr-Dec	---	---	---	---	---	---	None
TrB:									
Troup	A								
		Jan-Dec	---	---	---	---	---	---	None
TrD:									
Troup	A								
		Jan-Dec	---	---	---	---	---	---	None

Table 17.--Physical and Chemical Properties

[Entries under "Erosion factors--T" apply to the entire profile. Absence of an entry indicates that data were not estimated]

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Soil reaction	Organic matter	Erosion factors		
									Kw	Kf	T
	In	Pct	g/cc	In/hr	In/in	Pct	pH	Pct			
ArC:											
Arents, reclaimed land.											
BeB:											
Benevolence-------	0-12	10-15	1.35-1.55	2-6	0.09-0.12	0.0-2.9	4.5-6.0	0.5-2.0	.20	.20	5
	12-37	10-18	1.50-1.65	2-6	0.09-0.12	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
	37-47	10-18	1.60-1.75	0.6-6	0.10-0.15	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
	47-80	18-30	1.60-1.75	0.6-6	0.10-0.15	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
BeC:											
Benevolence-------	0-12	10-15	1.35-1.55	2-6	0.09-0.12	0.0-2.9	4.5-6.0	0.5-2.0	.20	.20	5
	12-37	10-18	1.50-1.65	2-6	0.09-0.12	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
	37-47	10-18	1.50-1.65	0.6-6	0.10-0.15	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
	47-80	18-30	1.60-1.75	0.6-6	0.10-0.15	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
BoB:											
Bonneau-----------	0-6	5-15	1.30-1.70	6-20	0.05-0.11	0.0-2.9	4.5-6.0	0.5-2.0	.10	.10	5
	6-33	5-15	1.30-1.70	6-20	0.05-0.11	0.0-2.9	4.5-6.0	0.0-0.5	.10	.10	
	33-65	13-35	1.40-1.60	0.6-2	0.10-0.15	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
	65-80	18-42	1.40-1.60	0.6-2	0.10-0.16	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
BoC:											
Bonneau-----------	0-6	5-15	1.30-1.70	6-20	0.05-0.11	0.0-2.9	4.5-6.0	0.5-2.0	.10	.10	5
	6-33	5-15	1.30-1.70	6-20	0.05-0.11	0.0-2.9	4.5-6.0	0.0-0.5	.10	.10	
	33-65	13-35	1.40-1.60	0.6-2	0.10-0.15	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
	65-80	18-42	1.40-1.60	0.6-2	0.10-0.16	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
CoB:											
Cowarts-----------	0-7	3-10	1.30-1.70	2-6	0.06-0.10	0.0-2.9	4.5-5.5	0.5-2.0	.15	.15	4
	7-15	10-30	1.30-1.50	0.6-2	0.10-0.16	0.0-2.9	4.5-5.5	0.2-1.0	.28	.28	
	15-40	25-40	1.30-1.50	0.2-2	0.10-0.16	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
	40-80	18-35	1.65-1.80	0.06-0.6	0.10-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
Nankin------------	0-4	5-12	1.45-1.65	2-6	0.05-0.10	0.0-2.9	4.5-5.5	0.5-2.0	.17	.17	3
	4-16	15-35	1.55-1.65	0.6-2	0.10-0.15	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	16-44	30-50	1.30-1.70	0.2-0.6	0.11-0.16	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	44-80	15-35	1.60-1.70	0.6-2	0.10-0.15	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
FeA:											
Faceville---------	0-10	5-20	1.40-1.65	6-20	0.06-0.09	0.0-2.9	4.5-5.5	0.5-2.0	.28	.28	5
	10-80	35-55	1.25-1.60	0.6-2	0.12-0.18	0.0-2.9	4.5-5.5	0.0-0.5	.37	.37	
FeB:											
Faceville---------	0-10	5-20	1.40-1.65	6-20	0.06-0.09	0.0-2.9	4.5-5.5	0.5-2.0	.28	.28	5
	10-80	35-55	1.25-1.60	0.6-2	0.12-0.18	0.0-2.9	4.5-5.5	0.0-0.5	.37	.37	
FeC:											
Faceville---------	0-10	5-20	1.40-1.65	6-20	0.06-0.09	0.0-2.9	4.5-5.5	0.5-2.0	.28	.28	5
	10-80	35-55	1.25-1.60	0.6-2	0.12-0.18	0.0-2.9	4.5-5.5	0.0-0.5	.37	.37	
GoA:											
Goldsboro---------	0-10	2-8	1.55-1.75	6-20	0.06-0.11	0.0-2.9	4.5-5.5	0.5-2.0	.17	.17	5
	10-33	18-30	1.30-1.50	0.6-2	0.11-0.17	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	33-80	20-34	1.30-1.40	0.6-2	0.11-0.20	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	

Table 17.--Physical and Chemical Properties--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Soil reaction	Organic matter	Erosion factors Kw	Kf	T
	In	Pct	g/cc	In/hr	In/in	Pct	pH	Pct			
GrA:											
Grady	0-5	27-40	1.20-1.45	0.6-2	0.10-0.18	0.0-2.9	3.6-5.5	1.0-4.0	.24	.24	5
	5-65	45-65	1.50-1.60	0.06-0.2	0.12-0.16	3.0-5.9	3.6-5.5	0.0-1.0	.10	.10	
GsA:											
Greenville	0-8	15-30	1.30-1.65	0.6-2	0.12-0.18	0.0-2.9	4.5-6.0	1.0-3.0	.24	.24	5
	8-80	35-55	1.35-1.55	0.6-2	0.14-0.18	0.0-2.9	4.5-6.0	0.0-0.5	.17	.17	
GsB:											
Greenville	0-8	15-30	1.30-1.65	0.6-2	0.12-0.18	0.0-2.9	4.5-6.0	1.0-3.0	.24	.24	5
	8-80	35-55	1.35-1.55	0.6-2	0.14-0.18	0.0-2.9	4.5-6.0	0.0-0.5	.17	.17	
GsC:											
Greenville	0-8	15-30	1.30-1.65	0.6-2	0.12-0.18	0.0-2.9	4.5-6.0	1.0-3.0	.24	.24	5
	8-80	35-55	1.35-1.55	0.6-2	0.14-0.18	0.0-2.9	4.5-6.0	0.0-0.5	.17	.17	
GvD2:											
Greenville	0-8	35-55	1.35-1.55	0.6-2	0.14-0.18	0.0-2.9	4.5-6.0	0.0-0.5	.24	.24	5
	8-80	35-55	1.35-1.55	0.6-2	0.14-0.18	0.0-2.9	4.5-6.0	0.0-0.5	.17	.17	
KBA:											
Kinston	0-3	5-18	1.40-1.60	0.6-2	0.13-0.19	0.0-2.9	4.5-5.5	2.0-5.0	.24	.24	5
	3-8	5-18	1.40-1.60	0.6-2	0.13-0.19	0.0-2.9	4.5-5.5	2.0-5.0	.24	.24	
	8-15	25-40	1.40-1.60	0.6-2	0.13-0.19	0.0-2.9	4.5-5.5	2.0-5.0	.24	.24	
	15-33	5-18	1.40-1.60	0.6-2	0.13-0.19	0.0-2.9	4.5-5.5	2.0-5.0	.24	.20	
	33-52	18-34	1.30-1.50	0.6-2	0.14-0.18	0.0-2.9	4.5-5.5	0.0-3.0	.32	.32	
	52-80	2-10	1.50-1.70	6-20	0.03-0.06	0.0-2.9	4.5-5.5	0.0-3.0	.10	.10	
Bibb	0-5	2-18	1.50-1.70	0.6-2	0.12-0.18	0.0-2.9	4.5-5.5	1.0-3.0	.20	.20	5
	5-27	2-18	1.45-1.75	0.6-2	0.10-0.20	0.0-2.9	4.5-5.5	0.5-1.0	.37	.37	
	27-45	2-18	1.50-1.70	0.6-2	0.12-0.18	0.0-2.9	4.5-5.5	1.0-3.0	.20	.20	
	45-80	2-18	1.45-1.75	0.6-2	0.10-0.20	0.0-2.9	4.5-5.5	0.5-1.0	.37	.37	
LmB:											
Lucy	0-8	1-12	1.30-1.70	6-20	0.08-0.12	0.0-2.9	4.5-6.0	0.5-1.0	.10	.10	5
	8-24	1-12	1.30-1.70	6-20	0.08-0.12	0.0-2.9	4.5-6.0	0.0-0.5	.10	.10	
	24-48	10-20	1.40-1.60	2-6	0.10-0.12	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	48-72	20-45	1.40-1.60	0.6-2	0.12-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
LmC:											
Lucy	0-8	1-12	1.30-1.70	6-20	0.08-0.12	0.0-2.9	4.5-6.0	0.5-1.0	.10	.10	5
	8-24	1-12	1.30-1.70	6-20	0.08-0.12	0.0-2.9	4.5-6.0	0.0-0.5	.10	.10	
	24-48	10-20	1.40-1.60	2-6	0.10-0.12	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	48-72	20-45	1.40-1.60	0.6-2	0.12-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
LmD:											
Lucy	0-8	1-12	1.30-1.70	6-20	0.08-0.12	0.0-2.9	4.5-6.0	0.5-1.0	.10	.10	5
	8-24	1-12	1.30-1.70	6-20	0.08-0.12	0.0-2.9	4.5-6.0	0.0-0.5	.10	.10	
	24-48	10-20	1.40-1.60	2-6	0.10-0.12	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	48-72	20-45	1.40-1.60	0.6-2	0.12-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
NcD:											
Nankin	0-4	5-12	1.45-1.65	2-6	0.05-0.10	0.0-2.9	4.5-5.5	0.5-2.0	.17	.17	3
	4-16	15-35	1.55-1.65	0.6-2	0.10-0.15	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	16-44	30-50	1.30-1.70	0.2-0.6	0.11-0.16	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	44-80	15-35	1.60-1.70	0.6-2	0.10-0.15	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
Cowarts	0-7	3-10	1.30-1.70	2-6	0.06-0.10	0.0-2.9	4.5-5.5	0.5-2.0	.15	.15	4
	7-15	10-30	1.30-1.50	0.6-2	0.10-0.16	0.0-2.9	4.5-5.5	0.2-1.0	.28	.28	
	15-40	25-40	1.30-1.50	0.2-2	0.10-0.16	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
	40-80	18-35	1.65-1.80	0.06-0.6	0.10-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	

Table 17.--Physical and Chemical Properties--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Soil reaction	Organic matter	Erosion factors Kw	Kf	T
	In	Pct	g/cc	In/hr	In/in	Pct	pH	Pct			
NcF:											
Nankin	0-4	5-12	1.45-1.65	2-6	0.05-0.10	0.0-2.9	4.5-5.5	0.5-2.0	.17	.17	3
	4-16	15-35	1.55-1.65	0.6-2	0.10-0.15	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	16-44	30-50	1.30-1.70	0.2-0.6	0.11-0.16	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	44-80	15-35	1.60-1.70	0.6-2	0.10-0.15	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
Cowarts	0-7	3-10	1.30-1.70	2-6	0.06-0.10	0.0-2.9	4.5-5.5	0.5-2.0	.15	.15	4
	7-15	10-30	1.30-1.50	0.6-2	0.10-0.16	0.0-2.9	4.5-5.5	0.2-1.0	.28	.28	
	15-40	25-40	1.30-1.50	0.2-2	0.10-0.16	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
	40-80	18-35	1.65-1.80	0.06-0.6	0.10-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
NoA:											
Norfolk	0-6	2-8	1.55-1.70	6-20	0.06-0.11	0.0-2.9	3.5-5.5	0.5-2.0	.17	.17	5
	6-30	18-35	1.30-1.65	0.6-2	0.10-0.18	0.0-2.9	3.5-5.5	0.0-0.5	.24	.24	
	30-70	20-43	1.20-1.65	0.6-2	0.12-0.18	0.0-2.9	3.5-5.5	0.0-0.5	.24	.24	
	70-80	10-20	1.40-1.60	0.6-2	0.10-0.13	0.0-2.9	3.5-5.5	0.0-0.5	.20	.20	
NoB:											
Norfolk	0-6	2-8	1.55-1.70	6-20	0.06-0.11	0.0-2.9	3.5-5.5	0.5-2.0	.17	.17	5
	6-30	18-35	1.30-1.65	0.6-2	0.10-0.18	0.0-2.9	3.5-5.5	0.0-0.5	.24	.24	
	30-70	20-43	1.20-1.65	0.6-2	0.12-0.18	0.0-2.9	3.5-5.5	0.0-0.5	.24	.24	
	70-80	10-20	1.40-1.60	0.6-2	0.10-0.13	0.0-2.9	3.5-5.5	0.0-0.5	.20	.20	
OBB:											
Ochlockonee	0-4	3-12	1.40-1.60	2-6	0.06-0.12	0.0-2.9	4.5-5.5	0.5-2.0	.20	.20	5
	4-32	3-18	1.40-1.60	2-6	0.07-0.14	0.0-2.9	4.5-5.5	0.5-2.0	.20	.20	
	32-62	8-18	1.40-1.60	0.6-2	0.10-0.20	0.0-2.9	4.5-5.5	0.5-1.0	.20	.20	
	62-80	3-18	1.40-1.70	2-6	0.06-0.12	0.0-2.9	4.5-5.5	0.5-1.0	.17	.17	
Iuka	0-3	2-10	1.40-1.60	2-6	0.06-0.10	---	5.1-6.0	0.5-2.0	.17	.17	5
	3-20	8-18	1.40-1.60	0.6-2	0.10-0.20	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
	20-34	8-18	1.40-1.60	0.6-2	0.10-0.20	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
	34-80	5-15	1.40-1.60	0.6-2	0.10-0.20	0.0-2.9	4.5-5.5	0.0-0.5	.20	.20	
Bibb	0-5	2-18	1.50-1.70	0.6-2	0.12-0.18	0.0-2.9	4.5-5.5	1.0-3.0	.20	.20	5
	5-27	2-18	1.45-1.75	0.6-2	0.10-0.20	0.0-2.9	4.5-5.5	0.5-1.0	.37	.37	
	27-45	2-18	1.50-1.70	0.6-2	0.12-0.18	0.0-2.9	4.5-5.5	1.0-3.0	.20	.20	
	45-80	2-18	1.45-1.75	0.6-2	0.10-0.20	0.0-2.9	4.5-5.5	0.5-1.0	.37	.37	
OcA:											
Ocilla	0-10	4-10	1.45-1.65	2-20	0.05-0.08	0.0-2.9	4.5-5.5	1.0-2.0	.10	.10	5
	10-24	4-10	1.45-1.65	2-20	0.05-0.08	0.0-2.9	4.5-5.5	0.0-0.5	.10	.10	
	24-32	15-35	1.55-1.70	0.6-2	0.09-0.12	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	32-58	15-35	1.55-1.70	0.6-2	0.09-0.12	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	58-72	15-40	1.55-1.70	0.2-2	0.09-0.12	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
OeA:											
Orangeburg	0-7	4-10	1.35-1.55	2-6	0.06-0.09	0.0-2.9	4.5-6.0	0.5-2.0	.10	.10	5
	7-12	7-18	1.50-1.65	2-6	0.09-0.12	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
	12-22	18-35	1.60-1.75	0.6-2	0.11-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	22-80	20-45	1.60-1.75	0.6-2	0.11-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
OeB:											
Orangeburg	0-7	4-10	1.35-1.55	2-6	0.06-0.09	0.0-2.9	4.5-6.0	0.5-2.0	.10	.10	5
	7-12	7-18	1.50-1.65	2-6	0.09-0.12	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
	12-22	18-35	1.60-1.75	0.6-2	0.11-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	22-80	20-45	1.60-1.75	0.6-2	0.11-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	

Table 17.--Physical and Chemical Properties--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Soil reaction	Organic matter	Erosion factors Kw	Kf	T
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*pH*	*Pct*			
OgC2:											
Orangeburg--------	0-5	7-18	1.50-1.65	2-6	0.09-0.12	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	5
	5-12	7-18	1.50-1.65	2-6	0.09-0.12	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
	12-22	18-35	1.60-1.75	0.6-2	0.11-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	22-80	20-45	1.60-1.75	0.6-2	0.11-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
OgD2:											
Orangeburg--------	0-5	7-18	1.50-1.65	2-6	0.09-0.12	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	5
	5-12	7-18	1.50-1.65	2-6	0.09-0.12	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
	12-22	18-35	1.60-1.75	0.6-2	0.11-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	22-80	20-45	1.60-1.75	0.6-2	0.11-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
RaA:											
Rains-------------	0-8	5-20	1.30-1.60	2-6	0.10-0.14	0.0-2.9	3.6-6.5	1.0-6.0	.20	.20	5
	8-26	18-35	1.30-1.60	0.6-2	0.11-0.15	0.0-2.9	3.6-5.5	0.5-1.0	.24	.24	
	26-52	18-40	1.30-1.50	0.6-2	0.10-0.15	0.0-2.9	3.6-5.5	0.5-1.0	.28	.28	
	52-72	15-45	1.30-1.60	0.6-2	0.10-0.15	0.0-2.9	3.6-5.5	0.5-1.0	.28	.28	
ReA:											
Red Bay-----------	0-8	4-12	1.45-1.60	6-20	0.06-0.11	0.0-2.9	4.5-6.0	0.5-2.0	.15	.15	5
	8-40	10-25	1.30-1.60	0.6-6	0.10-0.14	0.0-2.9	4.5-6.0	0.0-0.5	.15	.15	
	40-80	18-35	1.30-1.50	0.6-2	0.12-0.17	0.0-2.9	4.5-5.5	0.0-0.5	.17	.17	
ReB:											
Red Bay-----------	0-8	4-12	1.45-1.60	6-20	0.06-0.11	0.0-2.9	4.5-6.0	0.5-2.0	.15	.15	5
	8-40	10-25	1.30-1.60	0.6-6	0.10-0.14	0.0-2.9	4.5-6.0	0.0-0.5	.15	.15	
	40-80	18-35	1.30-1.50	0.6-2	0.12-0.17	0.0-2.9	4.5-5.5	0.0-0.5	.17	.17	
RsC2:											
Red Bay-----------	0-5	7-18	1.50-1.65	2-6	0.09-0.12	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	5
	5-40	10-25	1.30-1.60	0.6-6	0.10-0.14	0.0-2.9	4.5-6.0	0.0-0.5	.15	.15	
	40-80	18-35	1.30-1.50	0.6-2	0.12-0.17	0.0-2.9	4.5-5.5	0.0-0.5	.17	.17	
RsD2:											
Red Bay-----------	0-5	7-18	1.50-1.65	2-6	0.09-0.12	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	5
	5-40	10-25	1.30-1.60	0.6-6	0.10-0.14	0.0-2.9	4.5-6.0	0.0-0.5	.15	.15	
	40-80	18-35	1.30-1.50	0.6-2	0.12-0.17	0.0-2.9	4.5-5.5	0.0-0.5	.17	.17	
SuC2:											
Sunsweet----------	0-4	5-15	1.35-1.50	2-6	0.09-0.12	0.0-2.9	4.5-5.5	0.5-1.0	.20	.24	2
	4-20	34-55	1.45-1.60	0.2-0.6	0.07-0.10	0.0-2.9	4.5-5.5	0.0-0.5	.37	.37	
	20-60	40-50	1.55-1.70	0.2-0.6	0.07-0.10	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
SuD2:											
Sunsweet----------	0-4	5-15	1.35-1.50	2-6	0.09-0.12	0.0-2.9	4.5-5.5	0.5-1.0	.20	.24	2
	4-20	34-55	1.45-1.60	0.2-0.6	0.07-0.10	0.0-2.9	4.5-5.5	0.0-0.5	.37	.37	
	20-60	40-50	1.55-1.70	0.2-0.6	0.07-0.10	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
TfB2:											
Tifton------------	0-5	10-20	1.30-1.50	6-20	0.06-0.10	0.0-2.9	4.5-6.0	1.0-2.0	.17	.24	4
	5-9	13-22	1.45-1.65	6-20	0.08-0.12	0.0-2.9	4.5-6.0	0.5-1.0	.24	.28	
	9-32	13-20	1.50-1.70	0.6-2	0.12-0.16	0.0-2.9	4.5-6.0	0.0-0.5	.24	.28	
	32-42	25-40	1.55-1.80	0.2-0.6	0.10-0.13	0.0-2.9	4.5-5.5	0.0-0.5	.17	.17	
	42-80	25-45	1.60-1.85	0.2-0.6	0.10-0.12	0.0-2.9	4.5-5.5	0.0-0.5	.17	.17	
TfC2:											
Tifton------------	0-5	10-20	1.30-1.50	6-20	0.06-0.10	0.0-2.9	4.5-6.0	1.0-2.0	.17	.24	4
	5-9	13-22	1.45-1.65	6-20	0.08-0.12	0.0-2.9	4.5-6.0	0.5-1.0	.24	.28	
	9-32	13-20	1.50-1.70	0.6-2	0.12-0.16	0.0-2.9	4.5-6.0	0.0-0.5	.24	.28	
	32-42	25-40	1.55-1.80	0.2-0.6	0.10-0.13	0.0-2.9	4.5-5.5	0.0-0.5	.17	.17	
	42-80	25-45	1.60-1.85	0.2-0.6	0.10-0.12	0.0-2.9	4.5-5.5	0.0-0.5	.17	.17	

Table 17.--Physical and Chemical Properties--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Soil reaction	Organic matter	Erosion factors Kw	Kf	T
	In	Pct	g/cc	In/hr	In/in	Pct	pH	Pct			
TrB:											
Troup-------------	0-9	2-8	1.30-1.70	6-20	0.03-0.70	0.0-2.9	4.5-5.5	0.5-1.0	.10	.10	5
	9-60	1-10	1.30-1.70	6-20	0.03-0.70	0.0-2.9	4.5-5.5	0.0-0.5	.10	.10	
	60-80	10-20	1.40-1.60	0.6-2	0.10-0.13	0.0-2.9	4.5-5.5	0.0-0.5	.20	.20	
TrD:											
Troup-------------	0-9	2-8	1.30-1.70	6-20	0.03-0.70	0.0-2.9	4.5-5.5	0.5-1.0	.10	.10	5
	9-60	2-8	1.30-1.70	6-20	0.03-0.70	0.0-2.9	4.5-5.5	0.0-0.5	.10	.10	
	60-80	10-20	1.40-1.60	0.6-2	0.10-0.13	0.0-2.9	4.5-5.5	0.0-0.5	.20	.20	

Table 18.--Taxonomic Classification of the Soils

Soil name	Family or higher taxonomic class
Benevolence	Coarse-loamy, kaolinitic, thermic Typic Kandiudults
Bibb	Coarse-loamy, siliceous, active, acid, thermic Typic Fluvaquents
Bonneau	Loamy, siliceous, subactive, thermic Arenic Paleudults
Cowarts	Fine-loamy, kaolinitic, thermic Typic Kanhapludults
Faceville	Fine, kaolinitic, thermic Typic Kandiudults
Goldsboro	Fine-loamy, siliceous, subactive, thermic Aquic Paleudults
Grady	Fine, kaolinitic, thermic Typic Paleaquults
Greenville	Fine, kaolinitic, thermic Rhodic Kandiudults
Iuka	Coarse-loamy, siliceous, active, acid, thermic Aquic Udifluvents
Kinston	Fine-loamy, siliceous, semiactive, acid, thermic Fluvaquentic Endoaquepts
Lucy	Loamy, kaolinitic, thermic Arenic Kandiudults
Nankin	Fine, kaolinitic, thermic Typic Kanhapludults
Norfolk	Fine-loamy, kaolinitic, thermic Typic Kandiudults
Ochlockonee	Coarse-loamy, siliceous, active, acid, thermic Typic Udifluvents
Ocilla	Loamy, siliceous, semiactive, thermic Aquic Arenic Paleudults
Orangeburg	Fine-loamy, kaolinitic, thermic Typic Kandiudults
Rains	Fine-loamy, siliceous, semiactive, thermic Typic Paleaquults
Red Bay	Fine-loamy, kaolinitic, thermic Rhodic Kandiudults
Sunsweet	Fine, kaolinitic, thermic Plinthic Paleudults
Tifton	Fine-loamy, kaolinitic, thermic Plinthic Kandiudults
Troup	Loamy, kaolinitic, thermic Grossarenic Kandiudults

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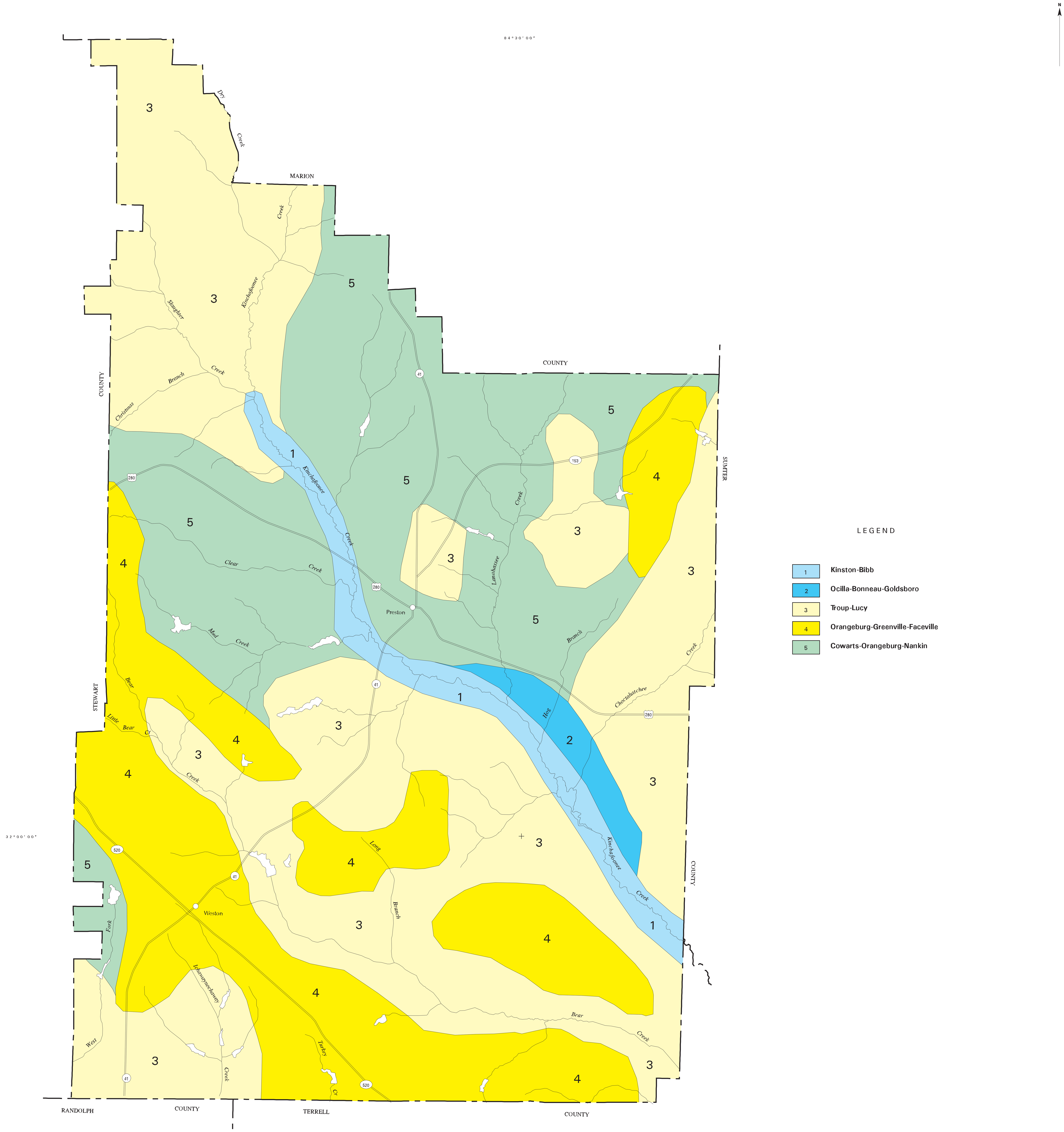

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NATURAL RESOURCES CONSERVATION SERVICE
UNIVERSITY OF GEORGIA
COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES
AGRICULTURAL EXPERIMENT STATIONS

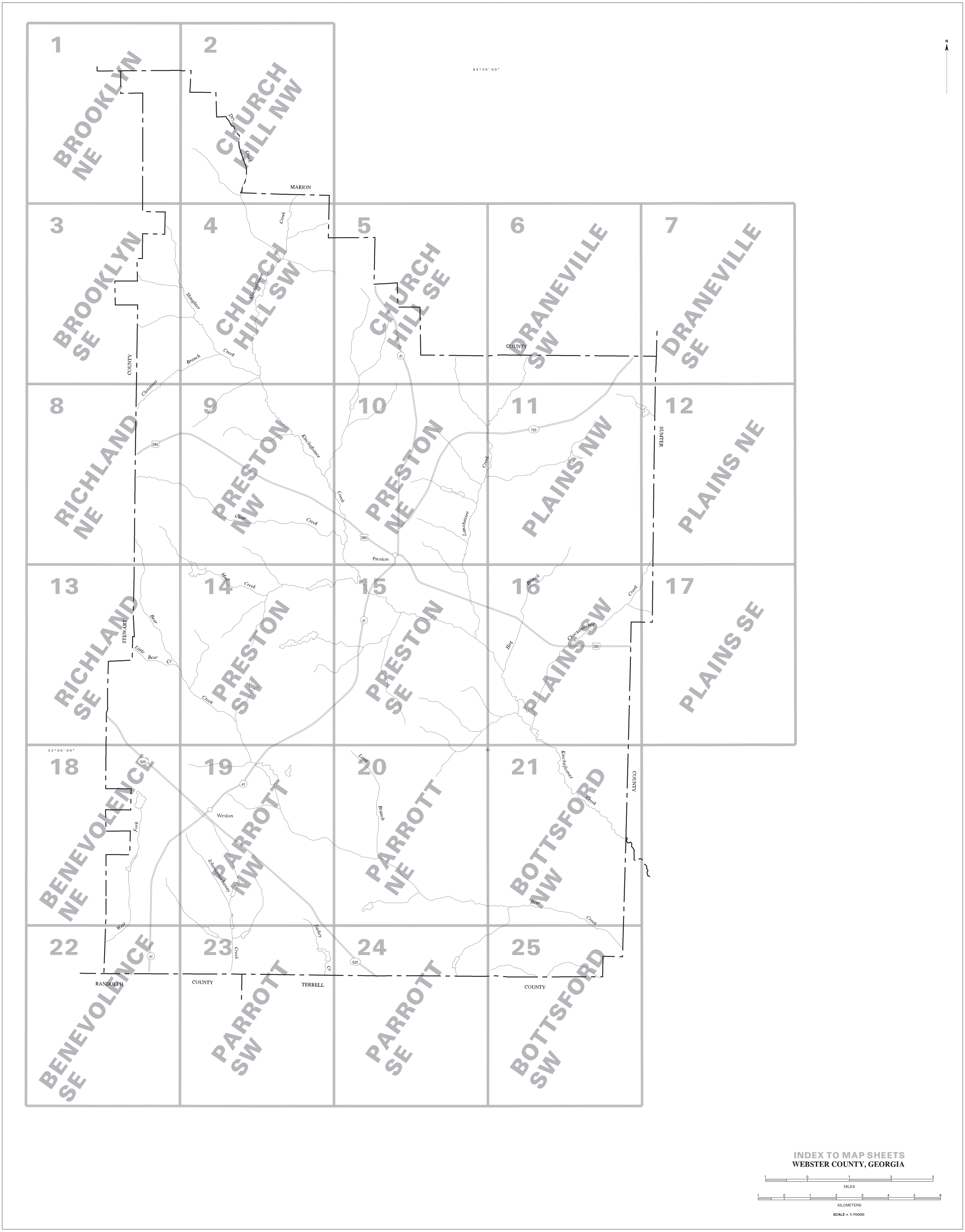
GENERAL SOIL MAP
WEBSTER COUNTY, GEORGIA

1 0 1 2 3
MILES

1 0 1 2 3 4 5 6
KILOMETERS

SCALE = 1:70000

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.



INDEX TO MAP SHEETS
WEBSTER COUNTY, GEORGIA

UNIVERSITY OF GEORGIA, COLLEGE OF AGRICULTURAL
AND ENVIRONMENTAL SCIENCES, AGRICULTURAL EXPERIMENTAL STATIONS

GEND

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ercent slopes
nt slopes
nt slopes
ercent slopes
nt slopes
nt slopes
nt slopes
cent slopes

percent slopes
percent slopes
percent slopes
cent slopes, eroded
cent slopes, frequently flooded
lopes
lopes
slopes
percent slopes
5 percent slopes
slopes
slopes
0 to 5 percent slopes, frequently flooded
slopes
rcent slopes
rcent slopes
ercent slopes, eroded
ercent slopes, eroded
slopes, occasionally flooded
nt slopes
nt slopes
nt slopes, eroded
ent slopes, eroded
cent slopes, eroded
rcent slopes, eroded
slopes, eroded
slopes, eroded
slopes
slopes

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES

County or parish

Field sheet matchline and neatline

LOCATED OBJECTS

Church

Cemetery

ROAD EMBLEMS AND DESIGNATIONS

Interstate 173

Federal 287

HYDROGRAPHIC FEATURES

STREAMS

Perennial stream, double line

Unclassified stream

SOIL SURVEY FEATURES

SOIL DELINEATIONS AND SYMBOLS ArC BeB

MISCELLANEOUS SURFACE FEATURES

Borrow pit

Gully

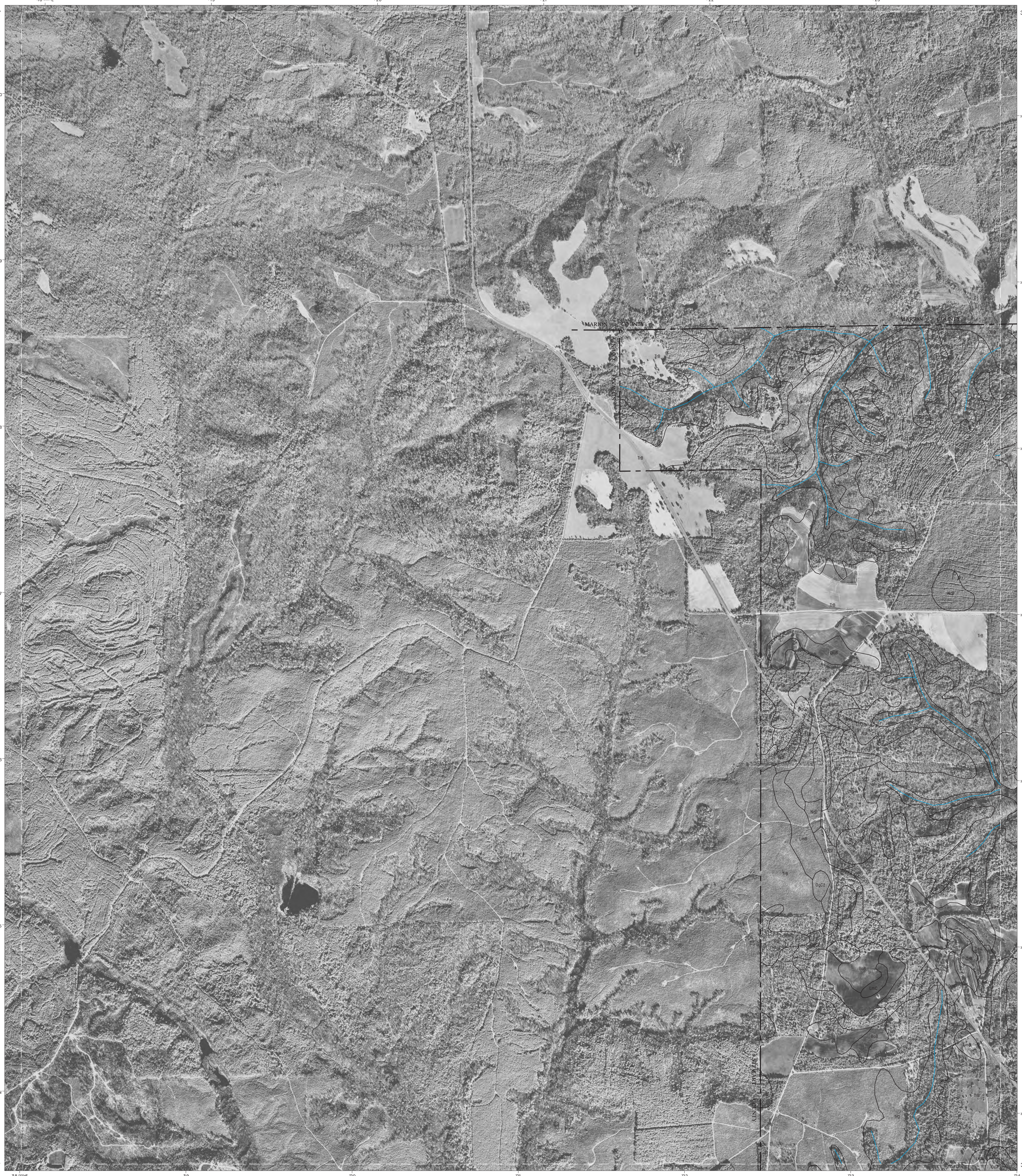
Perennial water

Stony spot

Wet spot

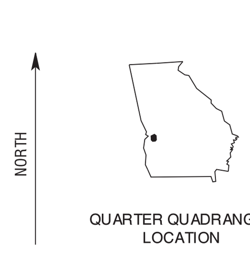
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

WEBSTER COUNTY, GEORGIA
BROOKLYN NE QUADRANGLE
SHEET NUMBER 1 OF 25



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1999-2000 aerial photography. Hydrography and culture information were acquired from Natural Resources Conservation Service. Hydrography and cultural layers were edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



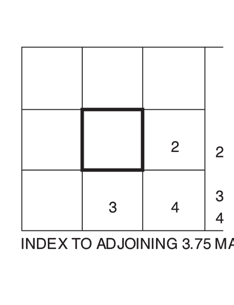
QUARTER QUADRANGLE
LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS



2 CHURCH HILL NW
3 BROOKLYN SE
4 CHURCH HILL SW

INDEX TO ADJOINING 3.75 MAPS

BROOKLYN NE, GEORGIA
3.75 MINUTE SERIES
SHEET NUMBER 1 OF 25

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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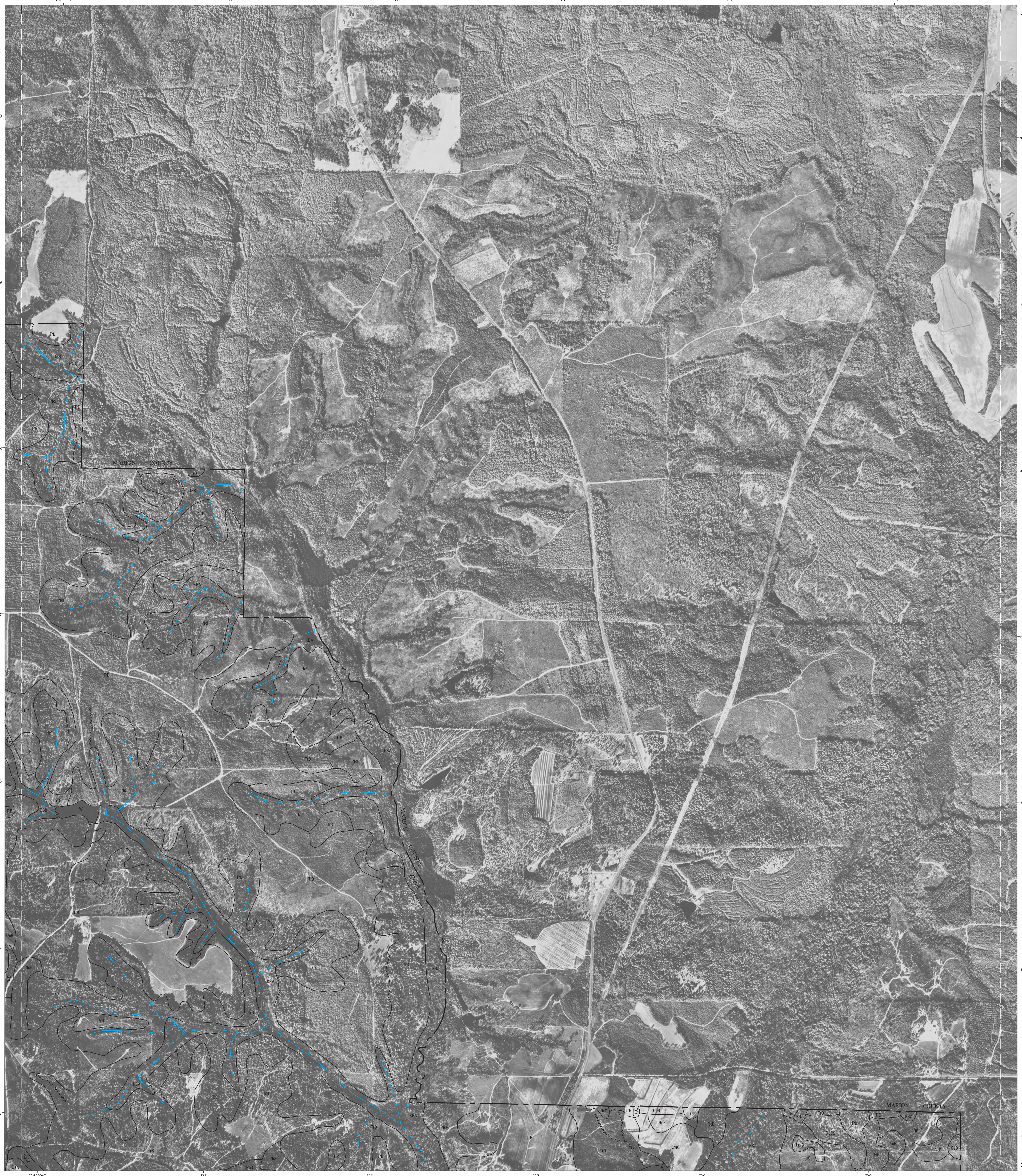
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

WEBSTER COUNTY, GEORGIA
CHURCH HILL NW QUADRANGLE
SHEET NUMBER 2 OF 25

84° 37′30″ | 84° 33′45″ | 32°15′00″



32°11′15″ | 84° 37′30″ | 84° 33′45″

Joins sheet 1, Brooklyn NE

Joins sheet 3, Brooklyn SE

Joins sheet 4, Church Hill SW

Joins sheet 5, Church Hill SE

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1999-2000 aerial photography. Hydrography and culture information were acquired from Natural Resources Conservation Service. Hydrography and cultural layers were edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1 BROOKLYN NE
3 BROOKLYN SE
4 CHURCH HILL SW
5 CHURCH HILL SE

INDEX TO ADJOINING 3.75 MAPS

CHURCH HILL NW, GEORGIA

3.75 MINUTE SERIES
SHEET NUMBER 2 OF 25

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

Joins sheet 1, Brooklyn NE

Joins sheet 2, Church Hill NW

Joins sheet 4, Church Hill SW

Joins sheet 8, Richland NE

Joins sheet 9, Preston NW

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 0 0.5

FEET: 500 0 500 1000 1500 2000 2500 3000 3500

KILOMETERS: 0.5 0 0.5

	1	2
		4
	8	9

1 BROOKLYN NE
2 CHURCH HILL NW
4 CHURCH HILL SW
8 RICHLAND NE
9 PRESTON NW

INDEX TO ADJOINING 3.75 MAPS

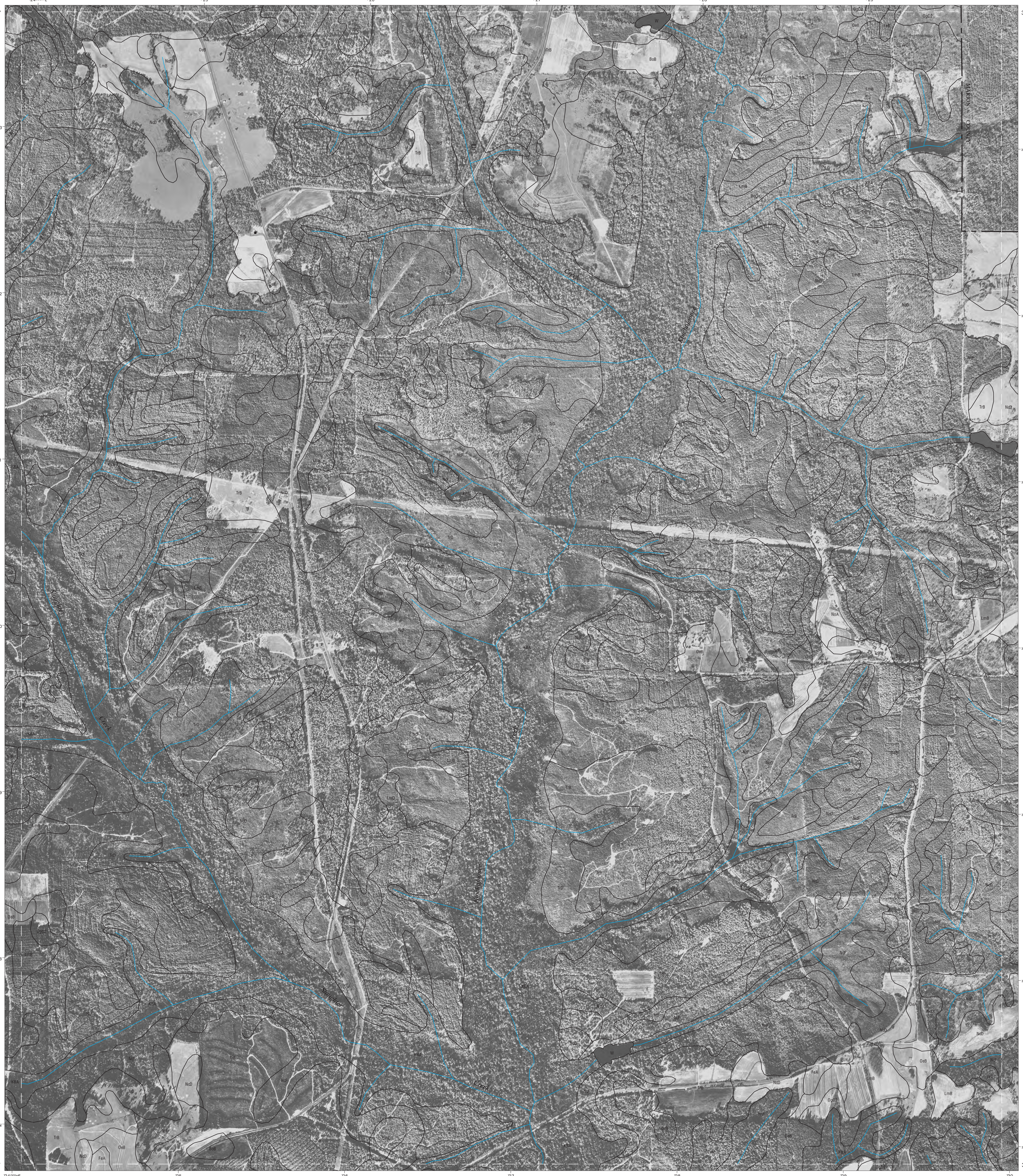
BROOKLYN SE, GEORGIA

3.75 MINUTE SERIES
SHEET NUMBER 3 OF 25

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

WEBSTER COUNTY, GEORGIA
CHURCH HILL SW QUADRANGLE
SHEET NUMBER 4 OF 25



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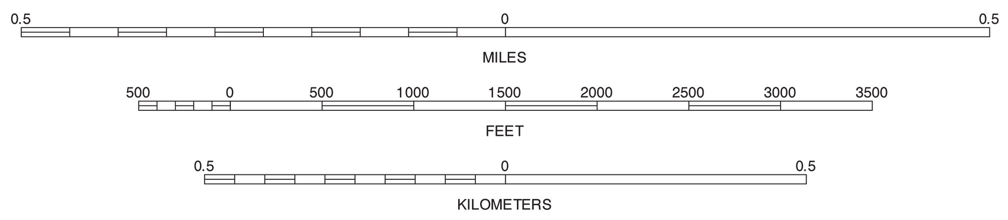
QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	
3		5
8	9	10

1 BROOKLYN NE
2 CHURCH HILL NW
3 BROOKLYN SE
5 CHURCH HILL SE
8 RICHLAND NE
9 PRESTON NW
10 PRESTON NE

INDEX TO ADJOINING 3.75 MAPS

CHURCH HILL SW, GEORGIA
3.75 MINUTE SERIES
SHEET NUMBER 4 OF 25

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

WEBSTER COUNTY, GEORGIA
CHURCH HILL SE QUADRANGLE
SHEET NUMBER 5 OF 25

Joins sheet 2, Church Hill NW

Joins sheet 9, Preston NW

Joins sheet 10, Preston NE

Joins sheet 11, Plains NW

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QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

2 CHURCH HILL NW
4 CHURCH HILL SW
6 DRANEVILLE SW
9 PRESTON NW
10 PRESTON NE
11 PLAINS NW

INDEX TO ADJOINING 3.75 MAPS

CHURCH HILL SE, GEORGIA

3.75 MINUTE SERIES
SHEET NUMBER 5 OF 25

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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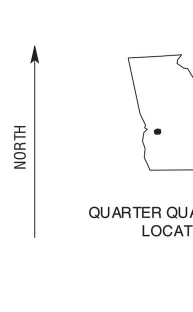
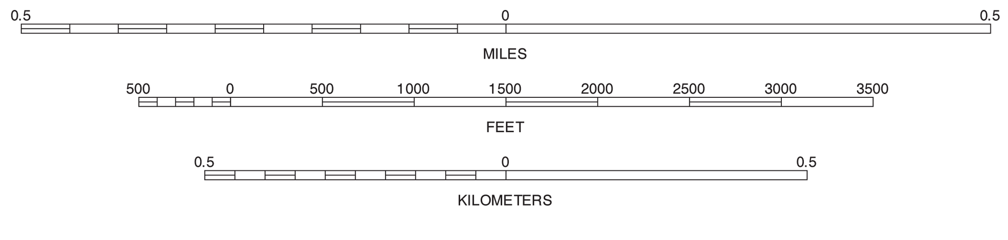
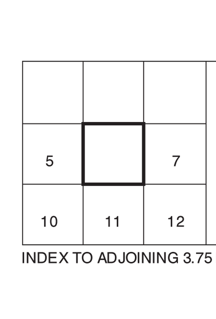


QUARTER QUADRANGLE LOCATION

SCALE 1:12000





5 CHURCH HILL SE
7 DRANEVILLE SE
10 PRESTON NE
11 PLAINS NW
12 PLAINS NE

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DRANEVILLE SW, GEORGIA

3.75 MINUTE SERIES
SHEET NUMBER 6 OF 25

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

WEBSTER COUNTY, GEORGIA
DRANEVILLE SE QUADRANGLE
SHEET NUMBER 7 OF 25

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1999-2000 aerial photography. Hydrography and culture information were acquired from Natural Resources Conservation Service. Hydrography and cultural layers were edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

6 DRANEVILLE SW
11 PLAINS NW
12 PLAINS NE

INDEX TO ADJOINING 3.75 MAPS

DRANEVILLE SE, GEORGIA
3.75 MINUTE SERIES
SHEET NUMBER 7 OF 25

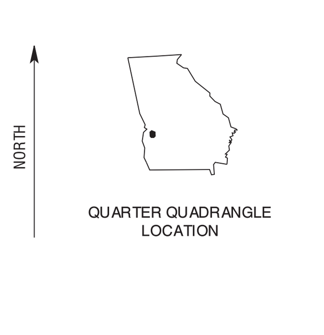
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

WEBSTER COUNTY, GEORGIA
RICHLAND NE QUADRANGLE
SHEET NUMBER 8 OF 25

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1999-2000 aerial photography. Hydrography and culture information were acquired from Natural Resources Conservation Service. Hydrography and cultural layers were edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

	3	4
	■	9
	13	14

3 BROOKLYN SE
4 CHURCH HILL SW
9 PRESTON NW
13 RICHLAND SE
14 PRESTON SW

INDEX TO ADJOINING 3.75 MAPS

RICHLAND NE, GEORGIA
3.75 MINUTE SERIES
SHEET NUMBER 8 OF 25

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 3, Brooklyn SE

Joins sheet 4, Church Hill SW

Joins sheet 5, Church Hill SE

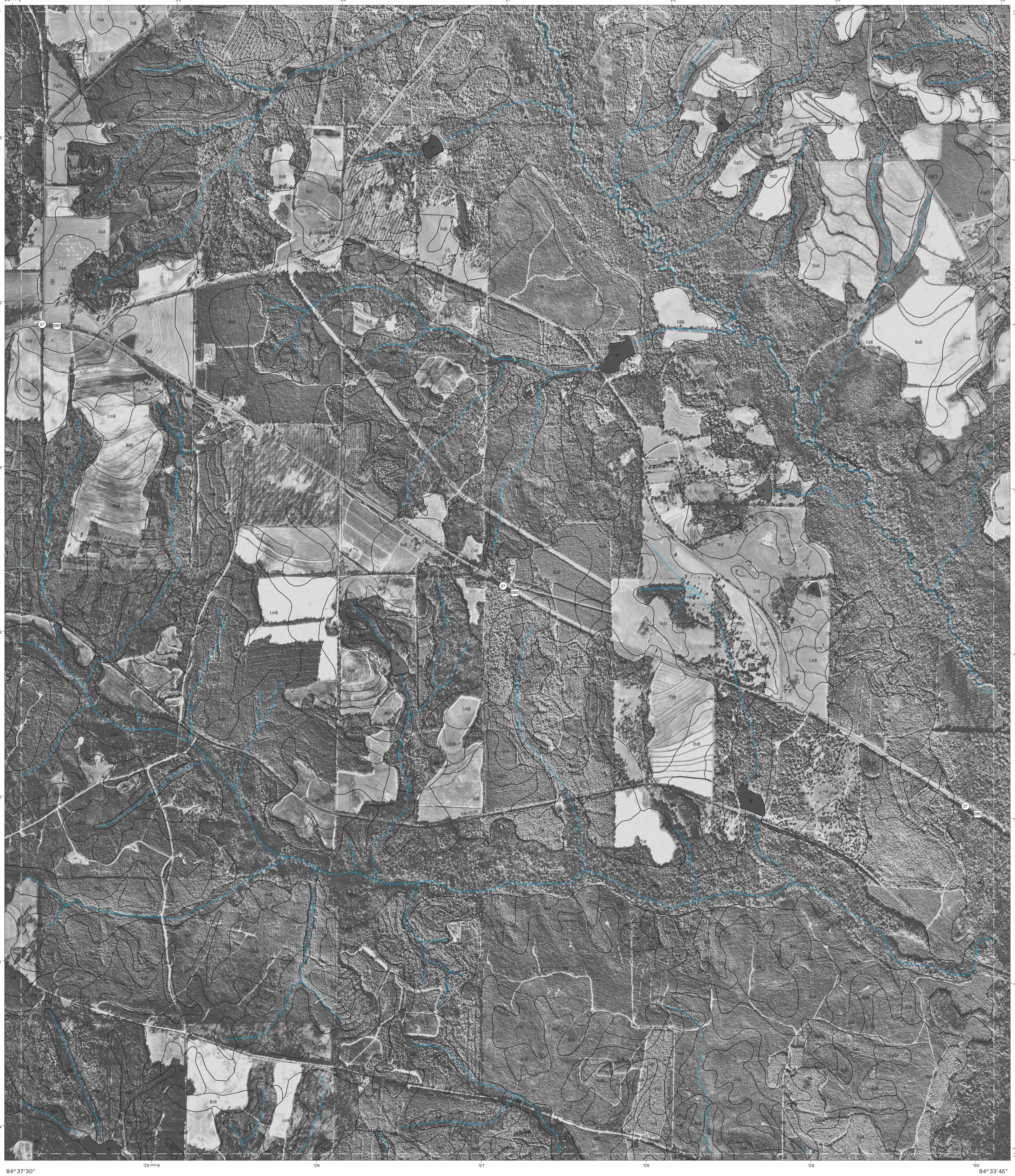
84° 37′30″

84° 33′45″

32° 07′30″

Joins sheet 8, Richland NE

Joins sheet 10, Preston NE



32° 03′45″

84° 37′30″

84° 33′45″

Joins sheet 13, Richland SE

Joins sheet 14, Preston SW

Joins sheet 15, Preston SE

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 0 0.5

FEET: 500 0 500 1000 1500 2000 2500 3000 3500

KILOMETERS: 0.5 0 0.5

3	4	5
8		10
13	14	15

3 BROOKLYN SE
4 CHURCH HILL SW
5 CHURCH HILL SE
8 RICHLAND NE
10 PRESTON NE
13 RICHLAND SE
14 PRESTON SW
15 PRESTON SE

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PRESTON NW, GEORGIA

3.75 MINUTE SERIES
SHEET NUMBER 9 OF 25

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

WEBSTER COUNTY, GEORGIA
PRESTON NE QUADRANGLE
SHEET NUMBER 10 OF 25

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1999-2000 aerial photography. Hydrography and culture information were acquired from Natural Resources Conservation Service. Hydrography and cultural layers were edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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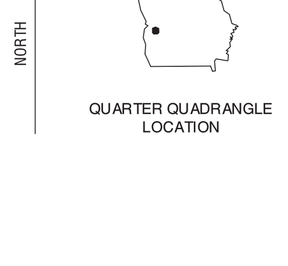
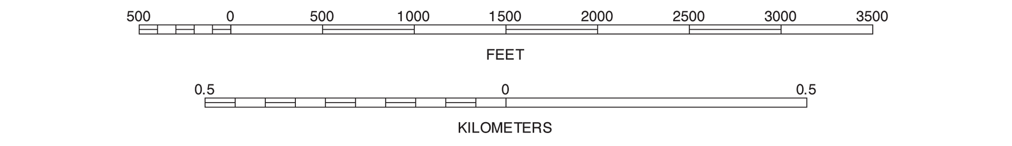


QUARTER QUADRANGLE LOCATION



4	5	6
9		11
14	15	16

4 CHURCH HILL SW
5 CHURCH HILL SE
6 DRANEVILLE SW
9 PRESTON NW
11 PLAINS NW
14 PRESTON SW
15 PRESTON SE
16 PLAINS SW

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PRESTON NE, GEORGIA

3.75 MINUTE SERIES
SHEET NUMBER 10 OF 25

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

WEBSTER COUNTY, GEORGIA
PLAINS NW QUADRANGLE
SHEET NUMBER 11 OF 25

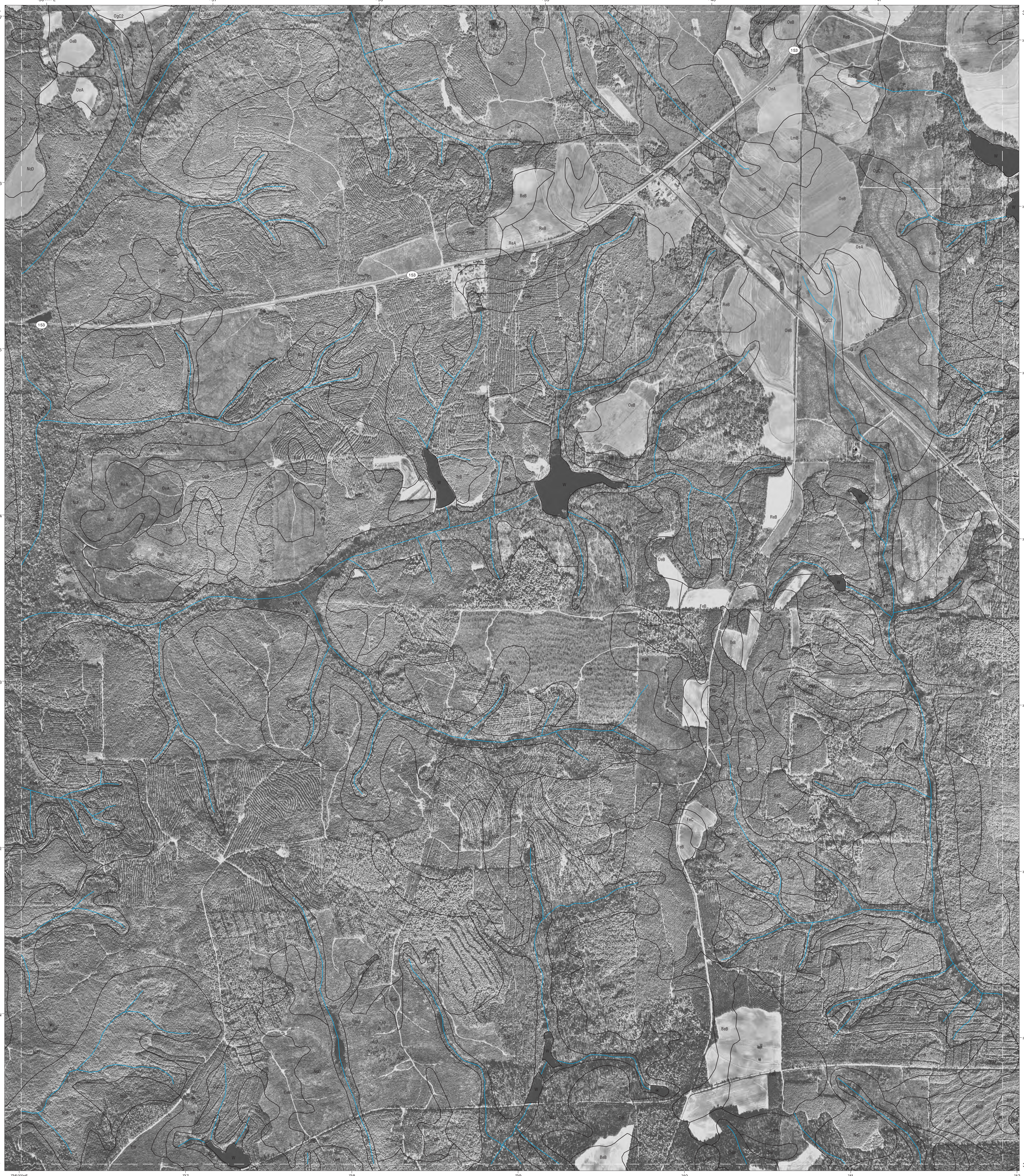
Joins sheet 5, Church Hill SE

Joins sheet 6, Draneville SW

Joins sheet 7, Draneville SE

84° 30′00″ 84° 26′15″

32° 07′30″



Joins sheet 10, Preston NE

Joins sheet 12, Plains NE

32° 03′45″

84° 30′00″ 84° 26′15″

Joins sheet 15, Preston SE

Joins sheet 16, Plains SW

Joins sheet 17, Plains SE

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 0 0.5

FEET: 500 0 500 1000 1500 2000 2500 3000 3500

KILOMETERS: 0.5 0 0.5

5	6	7
10		12
15	16	17

5 CHURCH HILL SE
6 DRANEVILLE SW
7 DRANEVILLE SE
10 PRESTON NE
12 PLAINS NE
15 PRESTON SE
16 PLAINS SW
17 PLAINS SE

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PLAINS NW, GEORGIA

3.75 MINUTE SERIES
SHEET NUMBER 11 OF 25

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

WEBSTER COUNTY, GEORGIA
PLAINS NE QUADRANGLE
SHEET NUMBER 12 OF 25

Joins sheet 6, Draneville SW

Joins sheet 7, Draneville SE

Joins sheet 11, Plains NW

Joins sheet 17, Plains SE

Joins sheet 16, Plains SW

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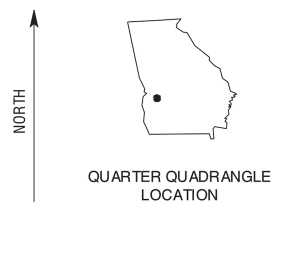

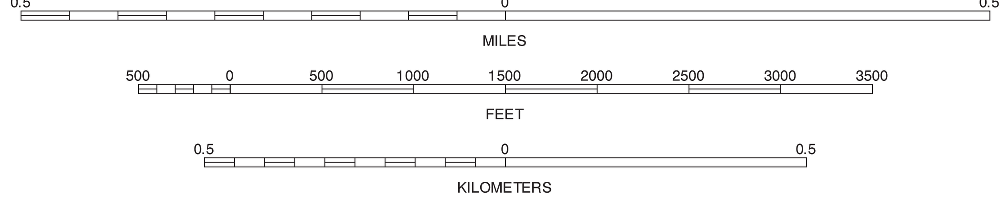

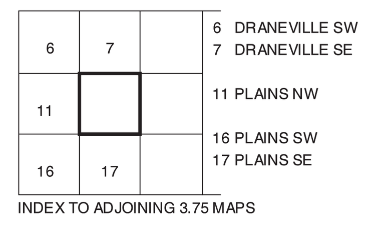

PLAINS NE, GEORGIA
3.75 MINUTE SERIES
SHEET NUMBER 12 OF 25

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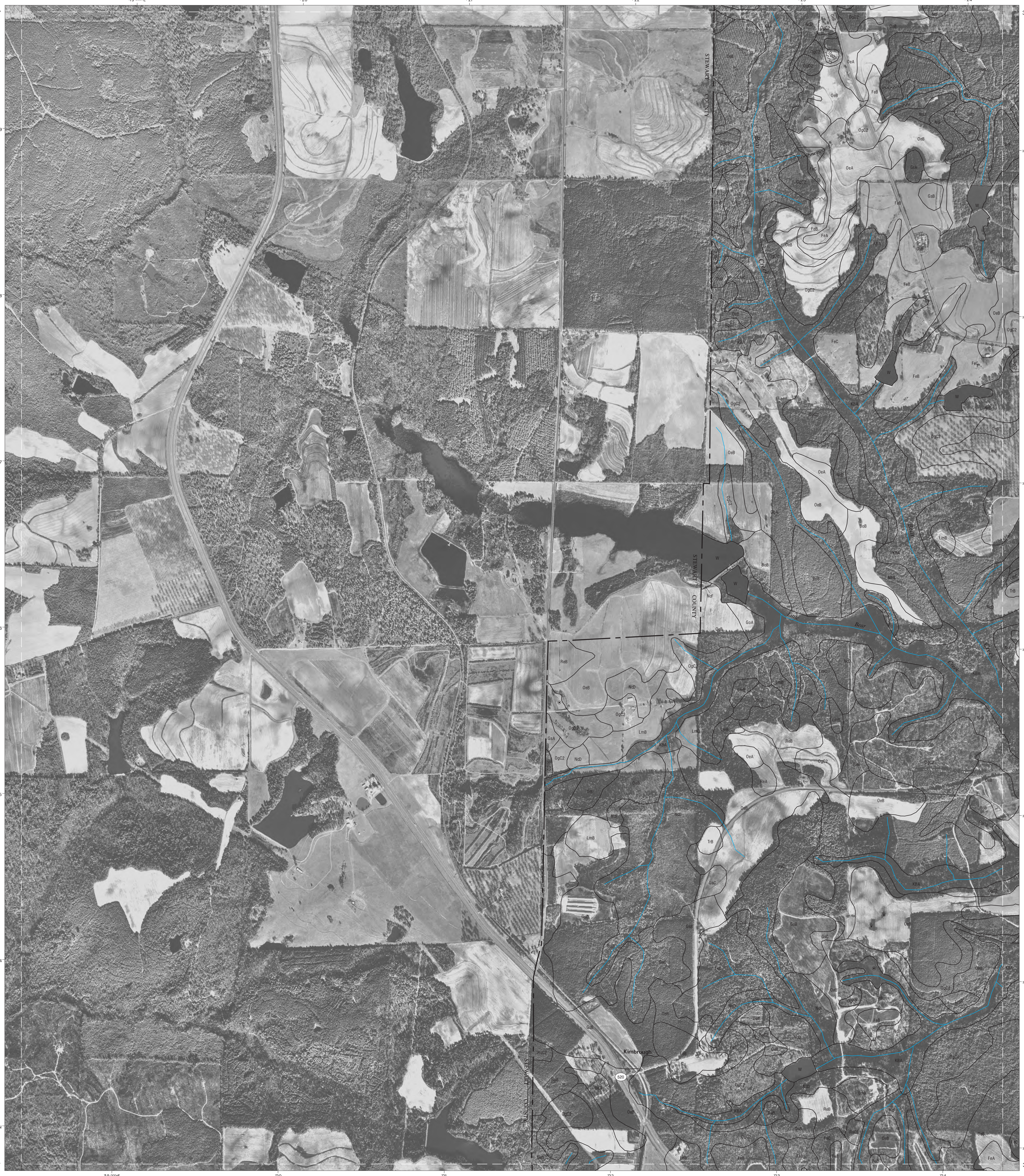
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

WEBSTER COUNTY, GEORGIA
RICHLAND SE QUADRANGLE
SHEET NUMBER 13 OF 25



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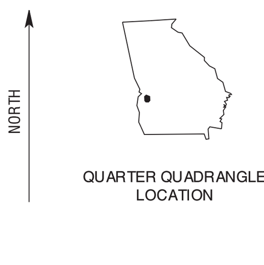
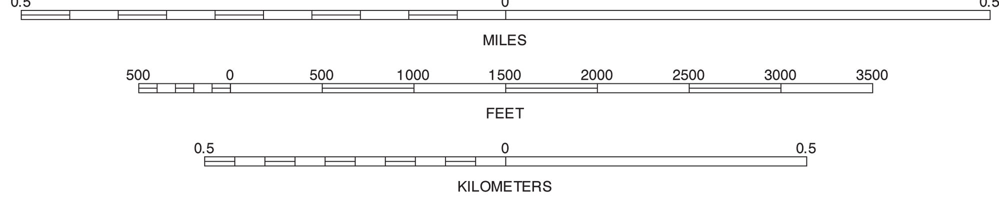


QUARTER QUADRANGLE LOCATION

SCALE 1:12000



	8	9
	■	14
	18	19

8 RICHLAND NE
9 PRESTON NW
14 PRESTON SW
18 BENEVOLENCE NE
19 PARROTT NW

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RICHLAND SE, GEORGIA
3.75 MINUTE SERIES
SHEET NUMBER 13 OF 25

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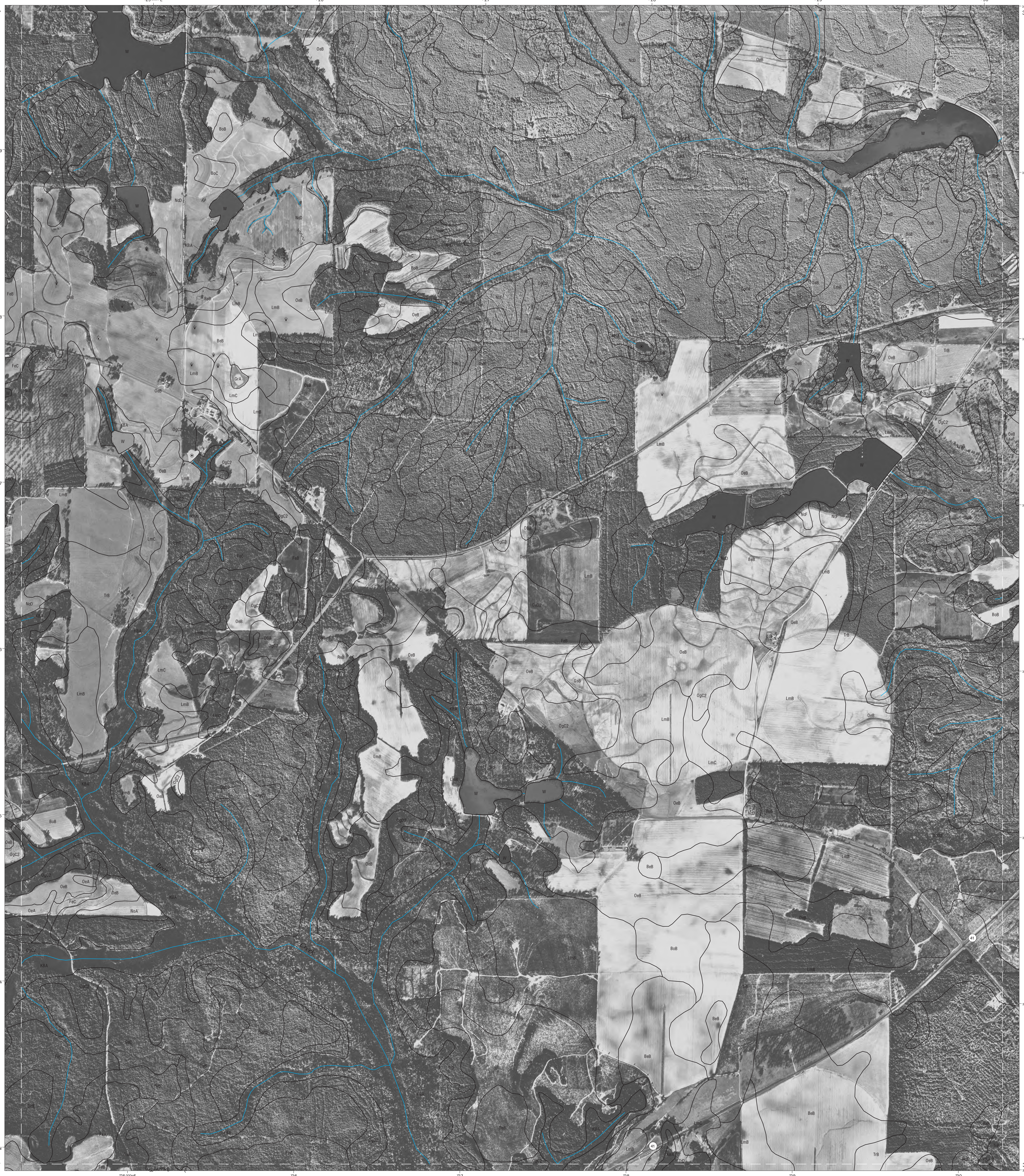
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

WEBSTER COUNTY, GEORGIA
PRESTON SW QUADRANGLE
SHEET NUMBER 14 OF 25



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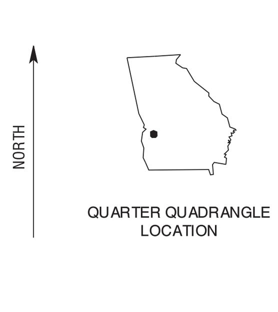
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 — 0 — 0.5

FEET: 500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500

KILOMETERS: 0.5 — 0 — 0.5

8	9	10
13		15
18	19	20

8 RICHLAND NE
9 PRESTON NW
10 PRESTON NE
13 RICHLAND SE
15 PRESTON SE
18 BENEVOLENCE NE
19 PARROTT NW
20 PARROTT NE

INDEX TO ADJOINING 3.75 MAPS

PRESTON SW, GEORGIA

3.75 MINUTE SERIES
SHEET NUMBER 14 OF 25

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

WEBSTER COUNTY, GEORGIA
PRESTON SE QUADRANGLE
SHEET NUMBER 15 OF 25

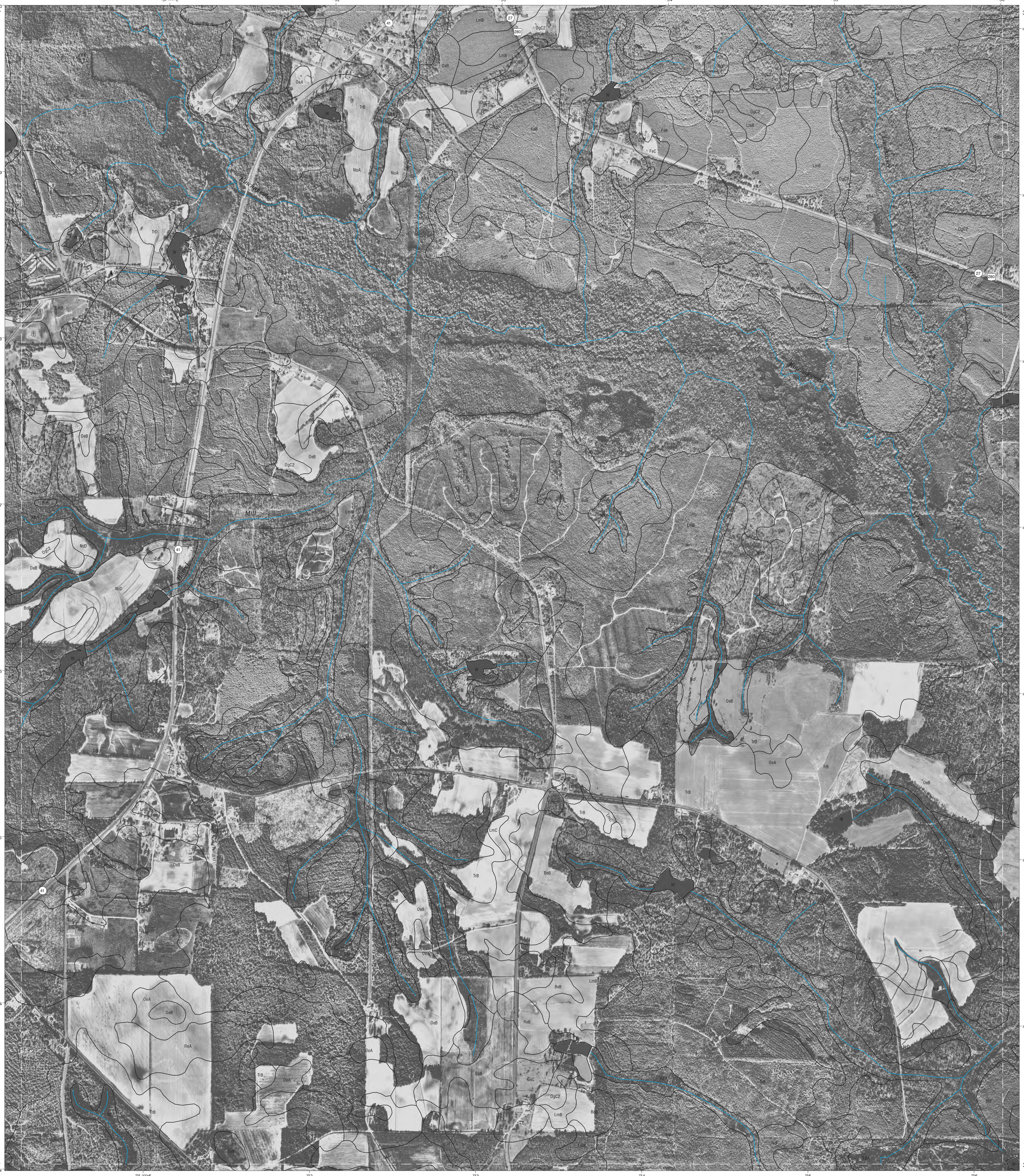
Joins sheet 9, Preston NW

Joins sheet 10, Preston NE

Joins sheet 11, Plains NW

84° 33′45″ 84° 30′00″

32° 03′45″ 32° 03′45″



Joins sheet 14, Preston SW

Joins sheet 16, Plains SW

32° 00′00″ 32° 00′00″

84° 33′45″ 84° 30′00″

Joins sheet 20, Parrott NE

Joins sheet 19, Parrott NW

Joins sheet 21, Bottsford NW

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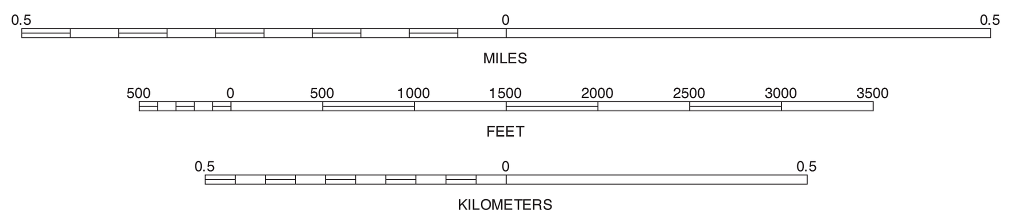
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

QUARTER QUADRANGLE LOCATION

SCALE 1:12000



9	10	11
14		16
19	20	21

9 PRESTON NW
10 PRESTON NE
11 PLAINS NW
14 PRESTON SW
16 PLAINS SW
19 PARROTT NW
20 PARROTT NE
21 BOTTSFORD NW

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PRESTON SE, GEORGIA

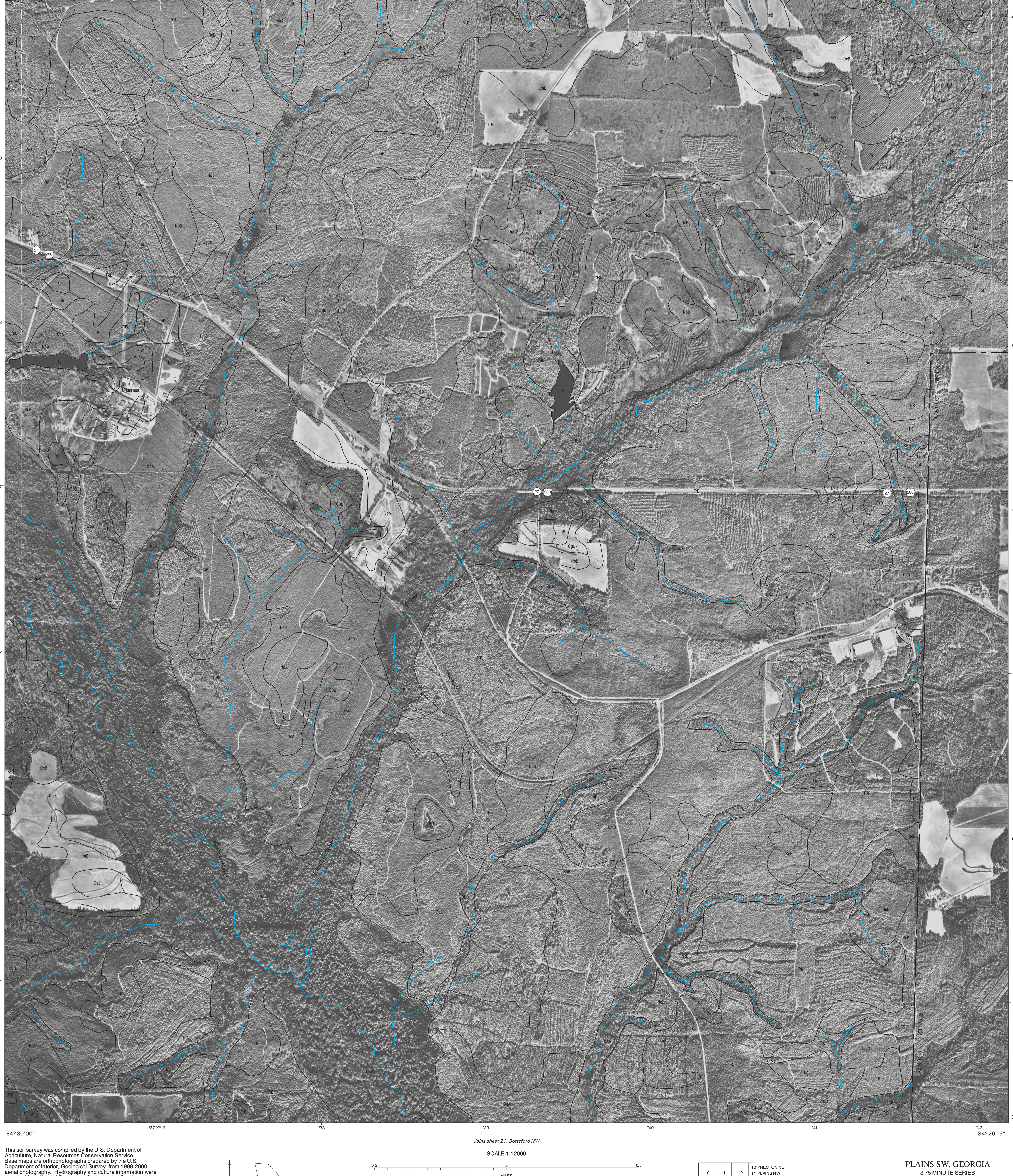
3.75 MINUTE SERIES
SHEET NUMBER 15 OF 25

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

WEBSTER COUNTY, GEORGIA
PLAINS SW QUADRANGLE
SHEET NUMBER 16 OF 25

Joins sheet 10, Preston NE
Joins sheet 11, Plains NW
Joins sheet 12, Plains NE



Joins sheet 15, Preston SE
Joins sheet 17, Plains SE
Joins sheet 20, Parrott NE
Joins sheet 21, Bottsford NW

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

10	11	12
15		17
20	21	

10 PRESTON NE
11 PLAINS NW
12 PLAINS NE
15 PRESTON SE
17 PLAINS SE
20 PARROTT NE
21 BOTTSFORD NW

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PLAINS SW, GEORGIA

3.75 MINUTE SERIES
SHEET NUMBER 16 OF 25

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

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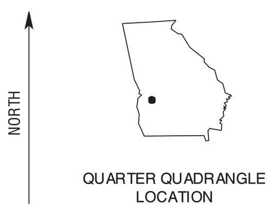

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

11	12	
16		
21		

11 PLAINS NW
12 PLAINS NE
16 PLAINS SW
21 BOTTSFORD NW

INDEX TO ADJOINING 3.75 MAPS

PLAINS SE, GEORGIA
3.75 MINUTE SERIES
SHEET NUMBER 17 OF 25

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

WEBSTER COUNTY, GEORGIA
BENEVOLENCE NE QUADRANGLE
SHEET NUMBER 18 OF 25

Joins sheet 13, Richland SE

Joins sheet 14, Preston SW

Joins sheet 19, Parrott NW

Joins sheet 22, Benevolence SE

Joins sheet 23, Parrott SW

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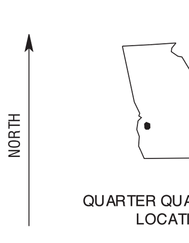
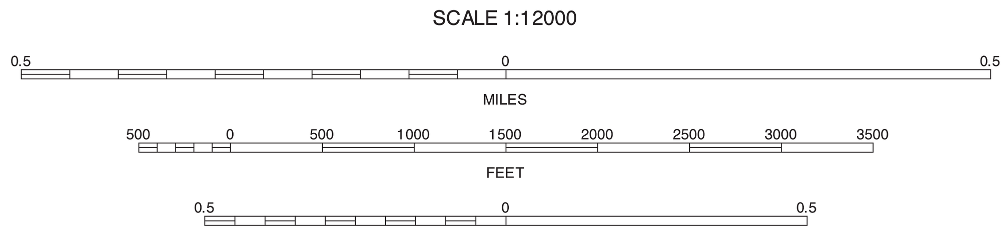


QUARTER QUADRANGLE LOCATION

SCALE 1:12000



	13	14	13 RICHLAND SE 14 PRESTON SW
	■	19	19 PARROTT NW
	22	23	22 BENEVOLENCE SE 23 PARROTT SW

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BENEVOLENCE NE, GEORGIA

3.75 MINUTE SERIES
SHEET NUMBER 18 OF 25

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

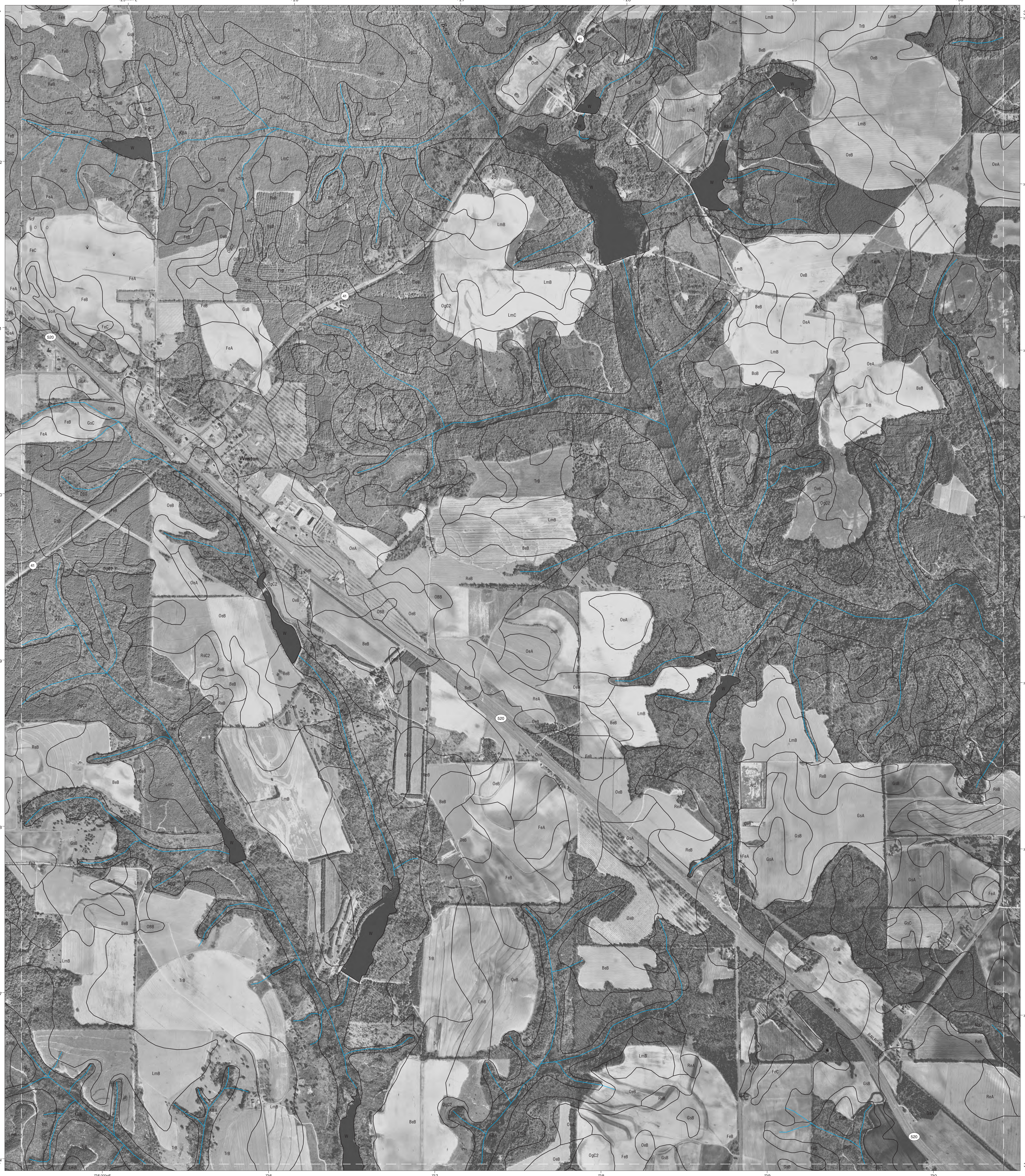
WEBSTER COUNTY, GEORGIA
PARROTT NW QUADRANGLE
SHEET NUMBER 19 OF 25

Joins sheet 14, Preston SW

84° 37′30″

84° 33′45″

32° 00′00″



Joins sheet 18, Benevolence NE

Joins sheet 20, Parrott NE

31° 56′15″

84° 37′30″

84° 33′45″

Joins sheet 22,
Benevolence SE

Joins sheet 23, Parrott SW

Joins sheet 24,
Parrott SE

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QUARTER QUADRANGLE
LOCATION

SCALE 1:12000

MILES: 0.5 — 0 — 0.5

FEET: 500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500

KILOMETERS: 0.5 — 0 — 0.5

13	14	15
18		20
22	23	24

13 RICHLAND SE
14 PRESTON SW
15 PRESTON SE
18 BENEVOLENCE NE
20 PARROTT NE
22 BENEVOLENCE SE
23 PARROTT SW
24 PARROTT SE

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PARROTT NW, GEORGIA

3.75 MINUTE SERIES
SHEET NUMBER 19 OF 25

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

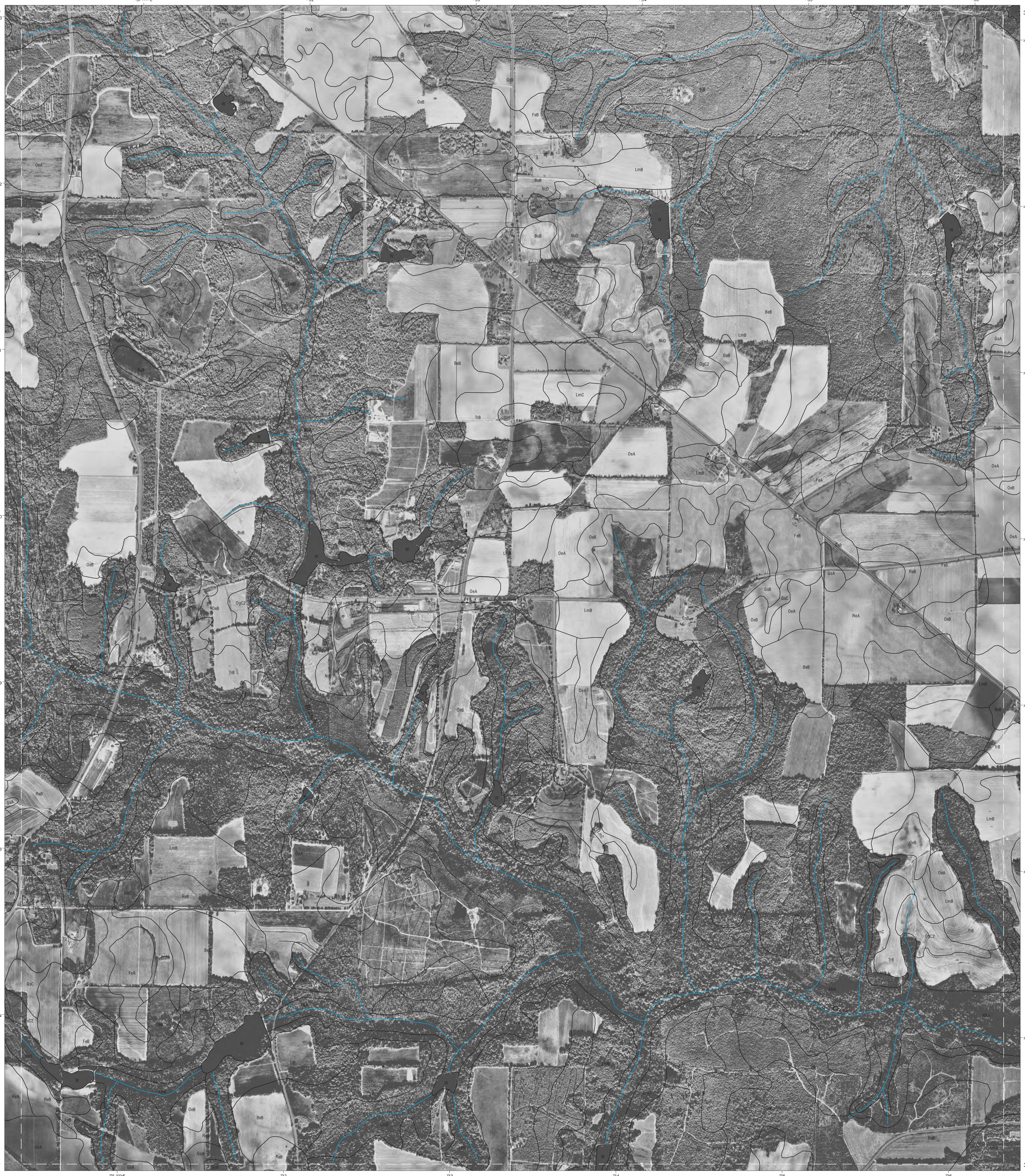
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

WEBSTER COUNTY, GEORGIA
PARROTT NE QUADRANGLE
SHEET NUMBER 20 OF 25

Joins sheet 14, Preston SW

Joins sheet 15, Preston SE

Joins sheet 16, Plains SW



Joins sheet 19, Parrott NW

Joins sheet 21, Bottsford NW

Joins sheet 23, Parrott SW

Joins sheet 24, Parrott SE

Joins sheet 25, Bottsford SW

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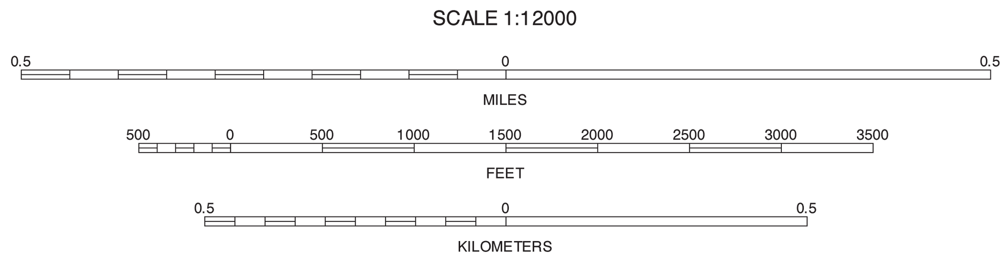
QUARTER QUADRANGLE LOCATION

SCALE 1:12000



14	15	16
19		21
23	24	25

14 PRESTON SW
15 PRESTON SE
16 PLAINS SW
19 PARROTT NW
21 BOTTSFORD NW
23 PARROTT SW
24 PARROTT SE
25 BOTTSFORD SW

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PARROTT NE, GEORGIA
3.75 MINUTE SERIES
SHEET NUMBER 20 OF 25

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UNITED STATES
DEPARTMENT OF AGRICULTURE
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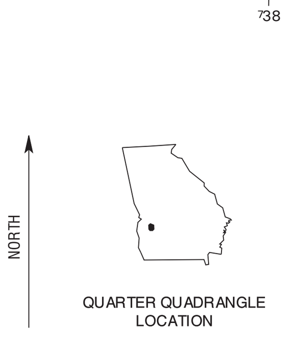

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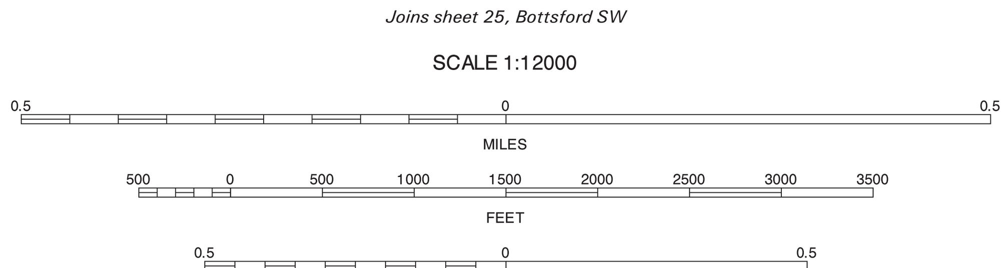

15	16	17
20		
24	25	

15 PRESTON SE
16 PLAINS SW
17 PLAINS SE
20 PARROTT NE
24 PARROTT SE
25 BOTTSFORD SW

INDEX TO ADJOINING 3.75 MAPS

BOTTSFORD NW, GEORGIA
3.75 MINUTE SERIES
SHEET NUMBER 21 OF 25

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 18, Benevolence NE

Joins sheet 19, Parrott NW

84° 41′15″ 84° 37′30″

31° 56′15″

Joins sheet 23, Parrott SW

31° 52′30″

84° 41′15″ 84° 37′30″

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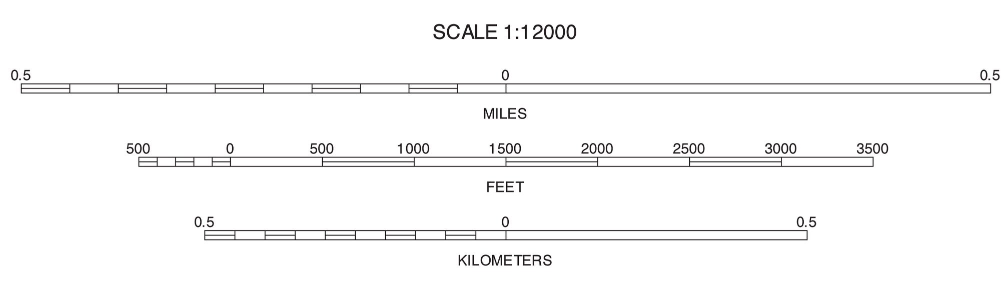
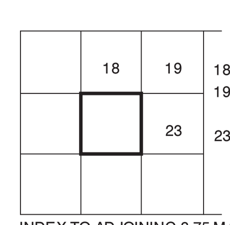
QUARTER QUADRANGLE
LOCATION

SCALE 1:12000





18 BENEVOLENCE NE
19 PARROTT NW
23 PARROTT SW

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BENEVOLENCE SE, GEORGIA
3.75 MINUTE SERIES
SHEET NUMBER 22 OF 25

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UNITED STATES
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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

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18 BENEVOLENCE NE
19 PARROTT NW
20 PARROTT NE
22 BENEVOLENCE SE
24 PARROTT SE

PARROTT SW, GEORGIA

3.75 MINUTE SERIES
SHEET NUMBER 23 OF 25

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 19, Parrott NW

Joins sheet 20, Parrott NE

Joins sheet 21, Bottsford NW

Joins sheet 23, Parrott SW

Joins sheet 25, Bottsford SW

84° 33′45″ 84° 30′00″

31° 56′15″

31° 52′30″

84° 33′45″ 84° 30′00″

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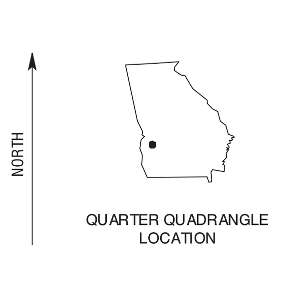
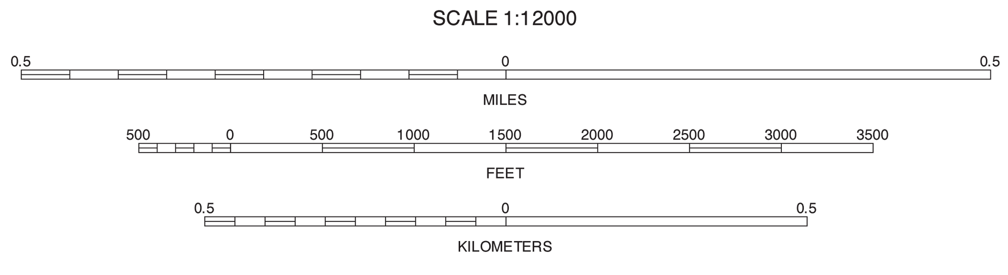
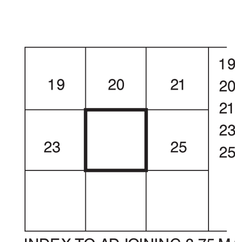


QUARTER QUADRANGLE LOCATION

SCALE 1:12000





19 PARROTT NW
20 PARROTT NE
21 BOTTSFORD NW
23 PARROTT SW
25 BOTTSFORD SW

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PARROTT SE, GEORGIA

3.75 MINUTE SERIES

SHEET NUMBER 24 OF 25

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UNITED STATES
DEPARTMENT OF AGRICULTURE
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WEBSTER COUNTY, GEORGIA
BOTTSFORD SW QUADRANGLE
SHEET NUMBER 25 OF 25

Joins sheet 20, Parrott NE

Joins sheet 21, Bottsford NW

84° 30′00″ | 84° 26′15″ | 31° 56′15″

Joins sheet 24, Parrott SE

31° 52′30″ | 84° 30′00″ | 737000mE | 738 | 739 | 740 | 741 | 742 | 84° 26′15″

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

20 PARROTT NE
21 BOTTSFORD NW
24 PARROTT SE

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BOTTSFORD SW, GEORGIA

3.75 MINUTE SERIES
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